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INDIA RUBBER WORLD

CAOUTCHOUC — HEVEA BRASILIENSIS — FICUS ELASTICA — GUTTA-PERCHA

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THE CONTROL OF THE INDUSTRY.

THE constant increase in the volume of crude rubber produced is due, not only to new uses which are being found for this material all the while, but to the fact that new users are found every year for the staple articles of rubber manufacture. Wherever civilized people exist to-day many kinds of rubber goods regarded as necessaries, and every country in which such goods are made on an important scale is adding every year to its export trade this class of merchandise. Very naturally attempts are made from time to time to establish rubber factories in new fields, for if rubber goods are a necessity in every country, why should not every country provide for its own wants in this line?

The people of every country appear to be able to do something in the way of manufacturing at least the coarser textiles, leather goods, and so on, even if still dependent upon foreigners for the finer or better grades. But with rubber it appears to be different. It is true that the list of countries in which rubber goods factories exist is added to year by year. But the bulk of the production in this line remains confined to the few countries which took up the industry at once upon the discovery of vulcanization.

Of course some of the countries in which rubber goods are now made on a small scale may later take an important rank in this industry, but it is safe to predict that the most of them will not. It is well enough to make coarse cotton cloths with native labor in a country where the demand is mainly for a cheap product. But people who use rubber hose or tires or footwear or druggists' sundries want good articles, and generally want the best—a class of products possible to make only with experience, a high degree of efficiency, and generally capable of being made at a much lower cost on a large than on a small scale.

For all of these reasons it is natural that the control of the industry should long be held by those few countries which have led in it for the last half century. There is another reason, however, not less influential. There is no other industry, perhaps, in which changes of practice are so frequent as in the making of rubber goods. What rubber factory in America or Britain or Germany is making any money to-day, depending upon the mechanical equipment of ten years ago, the same compounds, and the same general practice? What then must be the position of the outsider who, ten years ago or more, equipped a rubber works upon the basis of even the best that obtained in these countries at that time and since has introduced nothing new?

The rubber manufacturer, to keep pace with the industry, must be progressive; to do better than he did formerly he must employ new ideas and new methods; the rubber industry, as a whole, is controlled by inventive genius. A people who temperamentally lack the quality last mentioned need not be feared in competition by the countries which now make the bulk of the world's rubber goods, no matter how imitative they may be, no matter how industrious, no matter how low the scale of wages. Wherever the new practical ideas originate the control of the industry must remain. Wherever the rubber manufacture must go abroad for its ideas, practice, and mechanical equipment—inventing nothing, dependent alone upon imitation—there may be good work done and some money made in supplying home demands, but important rank in the industry will be out of the question.

THE COMING OF THE TAXICAB.

THE introduction of the taxicab in America is treated at some length on another page, as pointing to a new and ultimately important demand for rubber tires. We might cite many reasons why the use of these vehicles may be expected to become very extensive in this country, despite the fact that horse-drawn cabs never have come into general use here. But for the present our purpose is rather to suggest that a few failures of taxicab companies while the business is in its infancy will not necessarily prove anything against the general proposition which we have stated.

It is clear that so many vehicles running regularly at so much an hour will bring in a certain amount of money, and the expenses of upkeep and administration may be

figured out pretty accurately in advance. The one drawback, however, is that in the beginning, particularly in cities where cabs have not been in general use, some time will be required for people to get into the habit of using the new vehicles, and during this period the company which lacks a solid financial formation may come to grief.

This thought is suggested in part by the report that the General Omnibus Company, of Berlin, which carried 133,800,000 passengers in their motor 'buses last year, lost about $130,000. Now, a good many people would assume that, as a matter of course, the conveyance of about 366,575 cash paying passengers per day by a single corporation would result in a handsome profit. Just so the people of New York city seem to think that "subways," because crowded with passengers, must profit the companies operating them, and they clamor incessantly for extensions of the system.

But the transportation problem, in whatever form, is a complex one; one trouble with it is that only practice will prove if it will pay, and a heavy expenditure is necessary before a new service can be put into operation. Then people must get into the habit of using it, then the company must remedy mistakes and supply something which strangely was overlooked at the beginning, and after learning how to run the business economically, there may be dividends for the capital employed.

It is reasonable that a new class of vehicles run for public hire should immediately yield large profits, but one advantage of the motor cabs is that a new service may be started in any city at a less initial cost than almost any other transportation system, and we cannot avoid the impression that ultimately these public vehicles will largely outnumber the privately owned automobiles, the business in which has within a short time become so enormous. When the taxicab does come into its own the tire business will expand as it never has before. Still, as we have said, there may be serious risks in the paths of some of the pioneers in this field.

SOMETHING DOING IN MEXICO.

THERE is reason to believe that Mexican exports are beginning to include considerable rubber obtained from planted trees. It is true that these trees for the most part were planted primarily for the purpose of shading cacao or coffee, but the same was the case with the first trees that yielded commercial rubber in Ceylon. They are planted trees and the rubber is a plantation product just as much as if the original idea had been to form plantations of rubber. And if these trees yield rubber, why should not those trees which were planted for this purpose and no other prove equally productive on attaining the proper size, as they are beginning to do in Ceylon?

The quantity of plantation rubber produced in Mexico thus far cannot be stated so accurately as in the case of the Ceylon product, but some figures on this subject printed in another column appear worthy of confidence. The Mexican representative of an important New York firm states that their purchases of locally produced rubber for export have increased from 7,000 pounds seven years ago to 182,219 pounds in 1907. He is convinced that not over 4,000 pounds of this was "wild" rubber. Besides, he credits the other merchants in the same town with buying half as much more. Supposing the situation to be as stated by this merchant, the plantation rubber shipped last year from one Mexican town amounted to about 267,000 pounds, without reference to what may have been done in other parts of the republic.

Now, this is more rubber than was shipped from Ceylon in any year prior to 1906. It is more than was shipped from Malaya in any year before that date. It is more than all the rubber, of whatever kind, shipped from Mexico in the fiscal year 1897-98, and it has come about so quietly that most persons who read these lines probably will be surprised. Yet these figures are larger than those from the Far East which first gave a "boom" to rubber planting over there and led to the formation of some of the most prominent plantation companies that have been capitalized in England.

One hundred and eighty tons or so of rubber, considered alone, is not of much importance; considered as the product of planted *Castilloa* trees in Mexico, and evidence that such trees can be cultivated profitably, it is a matter of very real importance to the owners of several millions of planted trees who have been waiting for assurances that their money has not been thrown away. We hope that this latest intelligence will encourage more plantation managers in Mexico to get in readiness to do some systematic rubber tapping on a liberal scale.

INTERNATIONAL "TRUSTS."

AN international steel trust is positively reported to be in process of formation to combine important interests in Great Britain, continental Europe and the United States. It may be that the report is premature, but it reflects a definite tendency in the economic world to-day. However "trusts" may be criticized, in general or in particular, it must be admitted that industrial combinations have become a part of the established order of things, and we can see no indication of a return to the conditions that prevailed before the "trusts" came. Who is not better pleased with the through train service across the continent today than with the earlier mode of travel, when one had to change cars several times in crossing a single State, paying fares to a different company with every change?

The proposition calls for no argument that if combinations in manufacturing bring better results, they will be entered into; if not, they will be avoided. A general tendency toward combinations, therefore, would tend to demonstrate the soundness of the theory

on which they are based, no matter if mistakes are made in the management of this one or that. Are no mistakes made by individual manufacturers, and even by the smallest? Of course the public sentiment against "trusts" has been due to a fear that the creation of monopolies might enable producers to demand extortionate prices, and if this fear proves unjustified by events the popular outcry will cease.

If industrial combinations have merit at all, there is no reason why they should be confined each to a single country. International trading has become the rule in all important branches, and international combinations may become as important in tending to regulate trade between countries as the amalgamation of several factories having a common purpose in any given country. In the steel rail business, for example, or the manufacture of steel armor for warships, where practically the same kind of products is used in all countries, an international combination might result in supplying any particular purchaser with goods at rates lower than those now fluctuating at the instance of individual manufacturers. Besides which, and what is not less important, is the matter of stability of prices, upon which so much depends in maintaining profitable trading conditions.

The output of the rubber industry is more diversified than that of the steel works, and is not handled in such large quantities. Still, universal types have been developed in rubber production—for instance, in automobile tires—and in the new economic development now in progress it will not be surprising if international rubber companies should yet figure in commerce. We may see a single corporation producing its own rubber on plantations, making all or part of its machinery, manufacturing its textile fabrics, and, generally, controlling all the processes involved in converting the tree product into the rubber goods of commerce. But all of this without controlling the rubber industry as a whole, or making it impossible for new factories to be established by individual initiative.

It is not unlikely that the formation of international industrial combinations will be facilitated by the readjustment of international patent regulations now in progress. For instance, the American owner of a British patent, who must produce the article covered by it in Britain in order to render the patent valid there, will have a direct incentive to join a combination of manufacturers in both countries, thus forming perhaps the nucleus of an international "trust."

UNDERGROUND WIRES IN BOSTON.

THE report of the commissioner of wires of the city of Boston for 1907 shows a large amount of work to have been done during the year in placing underground telegraph and telephone and other electric wires which formerly were operated overhead. At the end of the year the underground electrical services of Boston embraced 1,534,615 feet of conduit, 9,955,032 feet of single duct, and 12,420,799 feet [=2163.3 miles] of cable. Of the 485,526 feet of cable placed underground during 1907, about 10 per cent. belonged to the Western Union Telegraph Co. and the American Telephone and Telegraph Co., employing paper insulation alone. Of the 15 other companies named, 9 are referred to as using rubber insulation alone, and the others rubber to a greater or less extent.

The following extract from the Boston report may prove of interest generally:

"During the year there has been no electrical fire due to wiring approved by this department, and I am pleased to be able to report that, with the exception of four fires in stations of the public service corporations, with a reported insurance loss of $11,383, the total reported insurance loss for the electrical fires in this city during the year was but $166."

VORITE, A NEW SUBSTITUTE.

A NUMBER of inquiries have come to THE INDIA RUBBER WORLD as to what Vorite is. Samples have been sent to the office of THE INDIA RUBBER WORLD, and according to the statement of the manufacturers it is a substitute containing absolutely no sulphur and no acid. The melting point for the soft grade is from 300° to 400° F., and for the harder grade 550° F. It is a floating substitute and burns without leaving any ash. It is made in three grades, which are distinguished by the names soft, ground, and white. According to the makers it absolutely resists oxidation and drying out, and is already largely used in the manufacture of insulated wire and in general mechanical rubber goods.

ECHO OF MR. BALLOU'S FISHING TRIP.

THE picture of Mr. Walter S. Ballou, of the rubber trade, and his fine catch of landlocked salmon near Topsfield, Maine, shown in the last INDIA RUBBER WORLD (page 312), appears to have created no little interest in the office of the Maine commissioners of inland fisheries and game, at Augusta. That office has decided to investigate the conditions of fishing in the region referred to, and the board's civil engineer has been directed to make plans for a fishway at Topsfield, the construction of which will be ordered if the conditions reported with regard to dams are really found to exist.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values of exports of manufactures of india-rubber and gutta-percha for April, 1908, and for the first ten months of five fiscal years, beginning June 1, from the treasury department at Washington:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All Other Rubber.	TOTAL.
April, 1908.....	$100,649	$22,651	$320,173	$443,473
July-March	1,040,985	1,342,965	2,802,371	5,186,321
Total	$1,141,634	$1,365,616	$3,122,544	$5,629,794
Total, 1906-07....	1,040,560	1,007,935	3,015,892	5,064,387
Total, 1905-06....	1,035,705	1,360,346	2,369,480	4,765,531
Total, 1904-05....	794,256	1,100,093	2,064,066	3,958,415
Total, 1903-04....	734,083	971,625	2,036,682	3,742,390

THE bureau of manufactures at Washington is in receipt of a letter from an American house in the export trade advising that it has a foreign inquiry for a special kind of rubber used in the manufacture of shoes, and would like to hear from firms in a position to furnish the material.

The Cost of Rubber on The Amazon.

AN article on "The Cost of Amazon Rubber" was reproduced from this journal recently in *La Chronique Coloniale*, of Brussels, in a later number of which we find the matter which follows:

THE COST OF AMAZON RUBBER.

In consequence of an article taken from THE INDIA RUBBER WORLD [April 1, 1908—page 209] and published by us in our preceding issue, we received the following letter, which we hasten to publish in our columns, the more so because the opinions expressed therein concur with our own. We confess, moreover, that we printed the previous article in the hope that it would call forth a reply.

TO THE EDITOR: Allow me to discuss a paragraph of the article on the cost of Amazon rubber, published in the *Chronique Coloniale*. The article in question states that the Brazilian gatherer is compelled to gather rubber at any price, so as to provide the necessaries of life.

The contents of the said article, considered as a whole, might cause your readers to conclude that Brazil will continue to produce as much rubber as she does at present, independently of the price which this product may bring in the market.

It is true that a certain part of the settled population of Amazonas will always produce rubber, even though prices should show a considerable decline. This refers to the same class of people concerning whom you state that they produced rubber in the remote past, when that substance brought only from 3 to 5 francs per kilogram.

However, it will be advisable to take into consideration that the rubber production of the Amazon, which has continually increased until it reached 60,000,000 pounds in 1907 [The arrivals at Parà were 82,550,000 pounds.—THE EDITOR I. R. W.], is largely due to the immigration of large numbers of laborers from the surrounding territories, and more especially from the state of Ceará. These laborers will undertake this long and disagreeable journey only if they are sure to be very liberally rewarded by the proceeds of the work of rubber gathering. To this must be added the quite large traveling expenses incurred by the laborers thus drawn towards the places where the rubber is to be gathered.

In order to attain the present production in Brazil, it was not only necessary to attract new labor from outside districts, but likewise to penetrate into territories hitherto little utilized, and to which laborers and provisions can only be transported at an exceedingly large expense. Therefore, even though it may be considered an undeniable fact that Amazonas will always produce rubber, no matter what its market price may be, it is, on the other hand, evident that if prices remain on their present level, the production would soon decrease to a considerable degree.

AD. HALLET.

VIEWS OF THE LATE MR. WICKHAM.

THE question of the cost of Amazon rubber was very carefully studied during his several visits to Brazil by Mr. Reginald W. Wickham, F. R. G. S., of England and Ceylon, whose death, we regret to learn, occurred recently in the Far East. Writing in *The Times of Ceylon* something over a year ago, Mr. Wickham declared: "There is no such thing as an average cost, as no man working rubber on the Amazon has the vaguest idea what it does cost." It would appear that the actual rubber tapper in the forest camps is paid for his work in goods, which are charged for by the merchant or employing classes at a rate which they intend shall be high enough to protect themselves against loss.

More recently Mr. Wickham contributed some further articles to the Ceylon *Times* on the cost of Amazon rubber, in which he predicted that "Brazilian rubber will not cease to be harvested when the price falls to 3 shillings [= 73 cents], nor even if it fell to 1*s.* 6*d.* [= 36½ cents]," for reasons which he proceeded to state—chiefly, that rubber is still coming forward, the goods to pay for which went to the interior 18 months or more ago, based upon calculations that the then prevailing higher prices of rubber would continue. Evidently what Mr. Wickham meant, however, was that rubber gathering on the Amazon would not cease *at once* on account of the most radical decline in price, but that ultimately conditions would shape themselves to new price levels, lower prices in the world's markets discouraging the rubber workers and higher prices stimulating the industry.

On general principles, Mr. Wickham's position must be regarded as sound, the same principles applying to all forms of human activity. But the point to be made is that Brazil's bed rock producing rate for rubber remains yet to be shown. Hitherto the chief rubber producing districts have been so remote that ordinary considerations of supply and demand have not had an immediate effect at any time upon the work of getting out rubber; it has only affected prices in the consuming markets, though, of course, fluctuations there have ultimately affected the handlers of rubber back of the larger primary markets.

In midsummer, 1902, Island's fine Parà rubber at New York was not quoted at above 70 cents per pound, having declined from $1.10 at the beginning of 1900. Did this decline check production? The crop season ending June 30, 1902, showed arrivals at Parà of 300,000 tons. In the successive years the arrivals were 29,850 tons, 30,580 tons, 33,060 tons, 34,490 tons, and 38,005 tons. In no year following 1902 is reflected in the Parà situation any falling off in production consequent upon the extreme low prices of that year.

Naturally, all rubber gathering is not profitable to those engaged in it, whether as principals or employés. But the failure of one individual or group in the business may not prevent others from profiting from it under precisely the same conditions. The best evidence that there is some sort of profit in rubber gathering in Amazonas is that it has continued for so many years, resulting in a constantly increasing product, without regard to prices in the outside world. To refer again to Mr. Wickham, he wrote at one time that native rubber at 1*s.* 6*d.* per pound would not and could not pay the producer. Yet in the same article he says: "It did not pay to sell coffee at 27*s.*, but it was sold; it did not pay to sell Ceylon tea at 3½*d.*, but it was sold." Who, then, shall determine the minimum price at which rubber can be produced without loss to those engaged in the business? In other words, what decline in selling prices will stop the export of rubber from the Amazon?

If space permitted, more might be said about the conditions under which trading in raw rubber is conducted. The head of the largest firm at Manàos, handling millions of pounds of rubber yearly, assured THE INDIA RUBBER WORLD that they were not concerned about the price of rubber; they only executed buying commissions for American and European firms at a fixed rate. The rubber importing houses in Liverpool and New York do not get even so near to the local traders who induce the natives to gather rubber, but buy rubber actually in sight at Parà or Manàos. Whether it has been produced at a profit or a loss does not concern them.

It may not be out of order here to reproduce the concluding paragraph of THE INDIA RUBBER WORLD'S article in the April issue: "The real question is not 'At what low figures will Brazil stop producing rubber?' but 'How cheaply can anybody else supply equally good rubber?'"

Incidentally it may be asked, now that rubber is advancing, is it because Amazon rubber is growing scarcer?

The indications are that this year's "crop" on the Amazon is the largest known, with one exception

Rubber and Other Interests in Guatemala.

WHILE most of the news reaching the United States from Guatemala is of a political character, there are evidences to those who study conditions in the latter country that progress is being made there, and the opportunities for the investment of capital having been taken advantage of to a large extent by European capitalists. It is doubtless due to the fact that Americans have been slower to make investments in Guatemala that the average newspaper reader in the States is so little informed in regard to Guatemalan progress.

MANUEL ESTRADA CABRERA.
[President of Guatemala.]

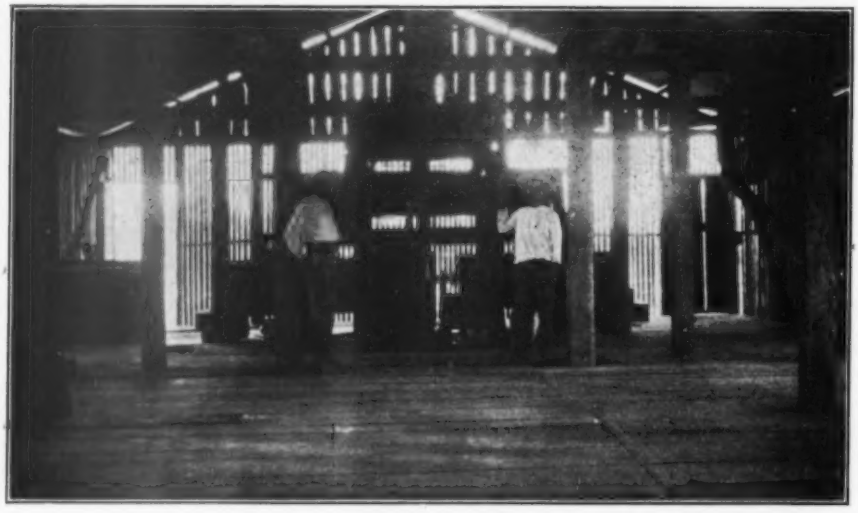
PRESIDENT CABRERA.

Speaking of political news, it may be mentioned that the latest development in Guatemala in this field related to the attempted assassination of President Cabrera, in April last. It may surprise those persons who imagine "revolutions" to be of frequent occurrence in the southern republics to know that the gentleman named has held the presidency for 10 years, having been elected in 1898. Previously he had been vice president, and before that a cabinet minister, after having filled a judgeship. It will be seen, therefore, that Estrada Cabrera is no novice in the affairs of government. The recent attempt upon the president's life has not been connected with any political movement. He was on the street, accompanied by a young army officer, when they were fired upon by a group of students, the officer being killed. Some of the students convicted of complicity in the crime were so young that Cabrera refused to sign death warrants for them.

Among the Americans who have become investors in Guatemala is Mr. Leo F. Nadeau, of Providence, Rhode Island, who is interested in rubber growing and grazing in that republic, for which he has been appointed consul at Providence, his home city. Mr. Nadeau has recently made public some expressions in regard to President Cerbrera, whom he considers enterprising and progressive, and liberal toward American ideas. He says that the better educated and more substantial portions of the population supports the president, regarding much of the country's wealth and present prosperity as due to his policies. The president has been active in developing a public school system, and in opening the way for German, American and British capital.

A RUBBER PLANTATION IN GUATEMALA.
[View on the estate of La Nueva Providencia Rubber Co. At the left appears Mr. Leo F. Nadeau, secretary and treasurer of the company.]

"CASTILLOA" RUBBER IN GUATEMALA.
[The trees on this property have resulted from the sowing of seeds among forest trees, and are now yielding commercial rubber.]



FACTORY PLANT OF THE WEST COAST RUBBER CO., IN GUATEMALA.
[On the left is the Creamer; in the center the Rolls, made at a Guatemala foundry, and on the right the Press.]

THE NATIONAL RAILROAD.

An event of great importance to the development of Guatemala was the recent completion of the Northern Railroad of Guatemala, which extends for 195 miles from Puerto Barrios, on the gulf coast, to Guatemala city, the capital of the republic. Beyond the latter city a previously existing line runs to San José, on the Pacific coast, thus giving Guatemala a transcontinental railway. Hitherto Guatemala has been singularly inaccessible. Rather than attempt the journey from the Atlantic coast overland to the national capital, a New Yorker, for example, who desired to visit that city would journey to San Francisco by rail, taking a ship thence down the coast, the time required to reach Guatemala city being 20 to 30 days from San Francisco. Puerto Barrios is only 5 days from New York by steamer, and 2½ days from New Orleans, to which must now be added only 195 miles of travel by rail to reach the capital.

The construction of the Northern Railroad of Guatemala has been very expensive—something like $12,000,000—owing to the engineering difficulties to be faced, but it is anticipated that the benefit to the nation will render it a profitable enterprise. It was constructed by the Guatemala Railway Co., a New Jersey corporation, of which the president is Minor C. Keith, a former Brooklyn man, who has done so much for the development of Costa Rica and is now vice president of the United Fruit Co. The vice president of the Guatemala Railway Co. is Sir William C. Van Horne, K. C. M. G., chairman of the Canadian Pacific Railway Co., and president of the Cuba Railroad Co. Shipments of freight from Guatemala to the United States have been largely from the Pacific coast via the Panama railroad, but much of this traffic will now, it is thought, be carried over the new all rail route across the republic. The advantages of the new transportation facilities naturally will tend to encourage many forms of industry in Guatemala, including planting interests.

THE RUBBER INTEREST.

Consul Nadeau describes Guatemala as among the wealthiest Central American republics. Outside of agriculture its natural resources have been developed very little as yet., but its coffee, cacao, rubber, spices and sugar interests are large and growing. Imports of American goods are extensive, but the bulk of the exports goes to Europe, Germany taking most of the coffee produced.

Native rubber (*Castilloa elastica*) has long been exploited in Guatemala, the quality being favorably regarded in the markets. The exports still include native rubber, in addition to which the produce of plantations is beginning to be offered. According to recent consular reports the shipments of rubber for eight years were:

	Pounds.
In 1899	520,993
In 1900	529,984
In 1901	495,040
In 1902	428,212
In 1903	——
In 1904	445,045
In 1905	373,152
In 1906	393,533

The first rubber plantations established in Guatemala were in connection with coffee planting, and have come into the control largely of German mercantile houses interested in the coffee trade. Such a plantation is "El Baul," on the Pacific coast, from which a large specimen of crude rubber was taken to the Paris Exposition of 1900, being awarded a medal. [See THE INDIA RUBBER WORLD, July 1, 1902—page 314.]

More recently several companies have been organized in the United States for the purpose of planting rubber in Guatemala, either alone or in connection with other crops, or in connection with grazing or the marketing of valuable native woods. One such company is La Nueva Providencia Rubber Co., incorporated in Rhode Island, of which Mr. Leo F. Nadeau, of Providence, R. I., already mentioned in this article, is secretary and treasurer. They have planted rubber extensively, and are devoting attention to other sources of income while awaiting the development of the rubber. Their property is in the district of Escuintla.

The West Coast Rubber Co., incorporated under the laws of New York state, and having headquarters in New York city, also have an estate—Plantation "Punian"—in the district of Escuintla. On this property a great many rubber seeds were sown in the forest lands by farm owners, with the result that a considerable number of trees are now large enough to yield rubber, and the product is being marketed. Several other American companies have been organized to plant rubber in Guatemala, but the extent of their developments is not now known.

A Belgian enterprise, formed a year or two ago, is the Cie. Franco-Belge du Guatemala, capitalized at 2,000,000 francs, and designed for planting rubber as well as exploiting the native product.

THE American consul general at Rio de Janeiro, Mr. George E. Anderson, reports that the decline in rubber prices has led to financial stress in the Amazon states, not alone among the rubber trades, but in every line of business. He says: "The general situation is reflected at large by the fact that the shipments of rubber in 1907 brought in Brazil a total of about $63,200,000. At the prices for the gum obtaining in 1906 this sum would have been about $78,000,000, and at the prices obtaining at the present time and apparently likely to continue most of the present year, the income from rubber on the basis of last year's shipments will amount to only $47,000,000, or $15,000,000 less than last year's income, and about $30,000,000 less than that of the year before, which the governmental world had come to regard as normal."

THE dividends of the Amazon Steam Navigation Co., Limited, for the business year 1907 amounted to 5 per cent., after having been only 4 per cent. for several years.

The News of Rubber Culture.

MEXICO SHIPPING PLANTATION RUBBER.

THE most definite and tangible information yet made public in regard to plantation rubber in Mexico occurs in the report of Mr. Lincoln Fishback, of Greeley, Colorado, who was selected by his fellow investors in the Monte Cristo Rubber Plantation Co., of Greeley, to visit their property in Mexico, which report has appeared in pamphlet form. The Monte Cristo plantation was begun only two years ago and of course is not producing rubber as yet, but after looking over the property and noting the progress made it occurred to Mr. Fishback to investigate reports which have been heard from time to time that plantation rubber is actually being exported from Mexico.

He learned that such rubber was being shipped from Frontera, a seaport, and that the source of this was in the neighborhood of San Juan Bautista, in the state of Tabasco, which is reached by sailing up the river Grijalva from Frontera. On April 14 last Mr. Fishback and the manager of the Monte Cristo company's plantation—which by the way, is not a great distance from Frontera—arrived at San Juan Bautista, which they found to be the largest city and commercial center in that part of Mexico, with a population of 12,000. They bore a letter from the United States consular agent at Frontera to Carl Schweickhardt, agent for Harburger & Stack, of New York, who opened his books and gave figures of rubber shipments by his house from San Juan as follows:

	Pounds.		Pounds.
In 1902 ..	7,404	In 1905.	88,044
In 1903 ..	44,000	In 1906.	172,488
In 1904 ..	60,013	In 1907.	182,219

Mr. Fishback proceeds: "He stated that of the last year's purchases less than 4,000 pounds was wild rubber, the balance coming from cultivated rubber orchards. He also stated that he thought other buyers in San Juan had bought half as much more, which would make total shipments from San Juan in 1907 about 273,000 pounds. All this rubber came from orchards raised and owned by Mexicans. Mr Schweickhardt was of opinion, that because of crude methods and only one tapping per year but a small part of the rubber was being gathered that could be taken from the trees without injuring them."

The house of Harburger & Stack, mentioned here, is an important one, and an illustration of their store in San Juan was given in THE INDIA RUBBER WORLD, June 1, 1908 (page 291). The above figures have been sent to Washington by the consular agent at Frontera, and appeared in *Daily Consular and Trade Reports* for June 5. Their interest may be heightened by a comparison with the figures of Frontera's rubber exports in the fiscal year 1897-98—64,513 pounds all told. In that year Mexico's total exports of rubber of all kinds were only 192,324 pounds.

Mr. Fishback found that most of the rubber referred to came from the vicinity of Teapa, a town about 60 miles distant, in the state of Chiapas, and thither he went, on horseback. On the last 20 miles of the ride he passed continuously through rubber which had been planted mostly as shade for cacao, so that the rubber trees had had to share with another crop the fertility of the soil. But in spite of this the trees were splendid specimens, many of them averaging 10 inches in diameter at 10 years old.

VIEW ON PLANTACION BUENA VENTURA.

[Estate of Mr. James C. Harvey (shown in the picture), in Vera Cruz, Mexico. Planted *Castilloa* rubber in tapping, with bananas on the right, planted to check the grass.]

On the plantation "La Asuncion," owned by Aristeo Gonzales, there are about 32,000 rubber trees, of which 25,000 are of tappable size, and 65,000 cacao trees. Their chief attention having been given to cacao, the rubber tapping has been done only in a desultory manner, and no statistics have been kept. On the neighboring plantation "Morelia," owned by Señora Dolores Medina Alfardo, there are about 40,000 rubber trees. Here, too, cacao growing is the chief business, the rubber tapping being intermittent, insufficient, and by improper methods, the machete being used exclusively instead of a rubber tapping knife. They gathered last year, however, 8,500 pounds of rubber, and Mr. Fishback thinks that with proper management this product could have been trebled.

Mr. Schweickhardt is quoted as saying that he had taken 5 ounces of rubber from a 7 year old tree at a single tapping, and Mr. Fishback sees no reason why several tappings a year cannot be made. In the Teapa district he found the natives tapping rubber trees as young as 4 years.

Mr. Fishback spent 10 days visiting 16 American rubber plantations, and several Mexican rubber plantations elsewhere than in the Teapa district. He reports: "Frankly I saw much of failure.—The same results will follow with the lack of culture in raising potatoes or corn. On every plantation visited I saw the proofs of what good culture will do, what bad culture has done." Where proper soil had been selected and the trees had good care Mr. Fishback found fine rubber trees—"the evidence of successful rubber *culture*, the proofs of the apparent merit of the enterprise."

A leading rubber importing firm write to THE INDIA RUBBER WORLD: "We are beginning to get consignments of *Castilloa* rubber from the plantations in Mexico, and to-day received a letter advising 800 pounds of 'creamed' from one plantation and as much more from a neighboring plantation, the latter gathered and cured we know not how. We are of the opinion that if we make a point of it we can get quite a little Mexican plantation rubber now, and will receive increased quantities as

time goes on, provided we get good prices, which we can do. What we should like is a list of the different plantations, in order to be able to communicate with them."

MR. HARVEY'S TREATMENT OF "CASTILLOA" LATEX.

MR. JAMES C. HARVEY, one of the pioneers in systematic rubber planting in Mexico, and now manager of an important plantation there, has written to a friend some notes on the treatment of *Castilloa* rubber, from which, while not meant for publication, THE INDIA RUBBER WORLD is now able to print some extracts, as follows:

"My idea with regard to the treatment of 'scrap' is this: Immediately after gathering it in baskets, loosely place it on wire racks, through which smoke can penetrate easily, and of course, a proper house must be constructed that will be sufficiently air tight to hold smoke; then have a little furnace quite detached from said house, and into which the smoke can be driven through a pipe by the action of a very simple revolving fan, thus avoiding any great increase of temperature in the smoke-house, as doubtless you know that a temperature much above 100° F. is apt to cause the rubber to become sticky.

"This is easily proved by exposing any recently prepared scrap or *plancha* to the action of the sun; then after the scrap is smoked in the manner described my idea is that it should be pressed into blocks of perhaps of 5 or 10 pounds in size. It will be understood that the block is in this manner thoroughly antisepticized throughout, and undoubtedly we must find what material would be best to use in creating this smoke, as certain materials, for a given volume of smoke, contain a higher percentage of creosote than others.

"With regard to the treatment of the *plancha*—or I ought to say, the treatment of the latex in order to prepare *plancha*—I carried out this year the following method:

"First, on the receipt of the latex from the field it was mixed with an equal volume of water to facilitate its passage through a comparatively small or fine meshed sieve, thus excluding all extraneous substance, such as little pieces of bark, chips, moss, lichens and what not. To this 4 additional volumes of water were added, and the whole placed in a barrel with a faucet exactly level with the base of the barrel, the barrel being stood upright.

"The following morning the latex was found to have arisen to the surface, having been completely separated during the night from the water and other liquids contained in the original latex. The black water was then drawn off until the latex appeared. Said latex was then in a condition for coagulation, this method being carried out:

"First, to every 10 gallons of the creamed latex a solution of the vine known here as 'amole'—botanically *Ipomoea bonanox*—is prepared, employing about 2 pounds of the vine, cutting the same into convenient lengths of about one foot, and preferably using the more ligneous portion of the vine—that is, portion of it nearest the ground—and where the bark has assumed a brownish color. It has been found that this portion of the vine contains a greater percentage of the coagulating agent than the green part.

"The solution is then prepared thus: A dozen pieces of the length described are macerated by beating with a mallet or wooden 'truncheon' and rubbed in about 5 gallons of water and then squeezed out, the process occupying but a few minutes time. The resultant liquor is then strained through a very fine sieve and stirred in carefully with the creamed latex.

"Coagulation, as a rule, will then take place within an hour's time, when the spongy mass can be lifted out carefully and placed upon a table or block and if coagulated in a vessel of about 18 inches in diameter will be found to be of about 3 inches in thickness. With a sharp butcher knife it can then be cut into strips of about 1½ inches in thickness and can be run backward and forward through an ordinary rubber rolled clothes wringer, over which is suspended a vessel containing water which is allowed to run in a little stream on the top of the wringer while the process is being carried on.

"These strips by the gradual screwing down of the roller can be reduced to about ½ inch in thickness. The wringer process should be carried on until there is no further evidence of a colored liquor being expressed from the strips or slabs under operation.

"It will be seen that two ends have been accomplished by this process, a very clean product, and practically the minimum of moisture left in the slab. The strips or slabs are then thrown into clean water, rinsed and hung up in a dark room to dry, then we have found it an excellent plan to suspend them on bamboo rods and when reasonably dry, yet still containing perhaps a small portion of water, the identical smoking process as applied to scrap rubber can be then applied, very soon after which the product will be ready for packing.

"Undoubtedly the application of more elaborate machinery appliances would prove more economical, yet by employing the process described, two men can easily handle 50 pounds of dry rubber per day."

NEW METHOD OF TAPPING "CASTILLOA."

MR. J. HERBERT FOSTER, manager of the plantation "La Meriden," in Vera Cruz, Mexico, reports a new method of tapping their cultivated *Castilloa* rubber. He uses the same knife as before—a knife brought out by Mr. Smith, of Chiapas, and described sometime in this journal—which cuts a U shaped groove in the bark, but making the cuts only about two-thirds the former depth, and then with a blade like that of a jackknife a deeper cut is made along the middle of the first one. This makes certain that the layer of bark which contains the latex is penetrated throughout its length, but the cut is so narrow as to make a comparatively trifling wound. It is said that these cuts are entirely healed in two or three months, whereas the old style cuts required a year or two to disappear.

ROBLITO RUBBER PLANTATION CO.

INCORPORATED February 4, 1908, under the laws of Arizona; capital authorized, $600,000; to develop an estate at Mapastepec, in Tonala district, state of Chiapas, Mexico. There are on the property about 10,000 8 year old planted *Castilloa* rubber trees and many thousands of wild trees. It is intended to plant rubber largely, and also other tropical crops, besides grazing capital and utilizing the hard woods now on the ground. The headquarters are at Oakland, California. The officers are: William P. Jarvis, president; L. C. Lent, vice president; S. C. Miller, an engineer with much experience in Mexico, general manager; J. L. Elder, treasurer; L. A. Carter, secretary.

BRIEF MENTION.

MR. MAXWELL RIDDLE, of the Republic Development Co. (New York), having returned from a recent sojourn in Mexico, speaks of being particularly impressed with the result of observations in the rubber planting belt, particularly as regards the rate of yield of the young trees when tapped with suitable knife and the low cost at which he found rubber extracted. He has figures pointing to 10 cents Mexican as the cost of getting out rubber under specially favorable conditions and expresses the opinion that generally rubber may be got out for twice this figure.

The last annual inspection of the "Estancia" rubber plantation of the Pennsylvania Obispo Plantation Co. (Scottsdale, Pa.), in Mexico, was made by Mr. W. A. Marvin, chosen for that purpose by the shareholders. His report refers also to a number of neighboring estates, and the prospects he regards very favorable for rubber cultivation in Oaxaca.

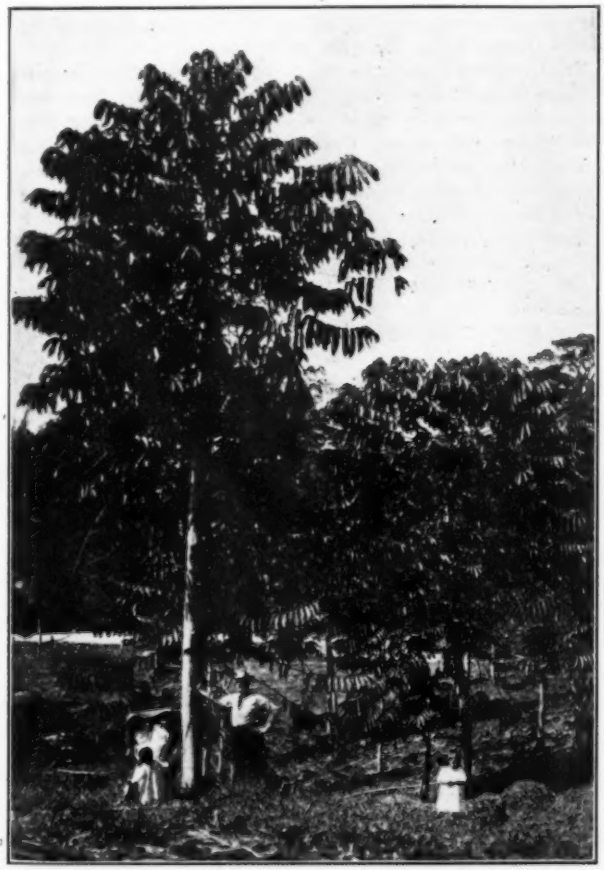
LARGE COMBINATION IN TEA AND RUBBER.

HARRISONS & CROSFIELD, LIMITED, is a recent London flotation for combining the old established business of Harrisons & Crosfield and allied tea trading firms, with houses in London, New York, and Montreal, and in Ceylon, India, and the Federated

Malay States. The new company is capitalized at £307,500 [=$1,494,448.75]. The tea business will be continued, and the company's interest in rubber planting, already extensive, is likely to be extended. Mr. Charles Arthur Lampard, one of the board, is a director also in a number of important rubber companies. The accounts of the combined companies show advances to and expenditure on tea, rubber, and produce estates, and interests in companies owning estates, of £108,294 5*s.* 7*d.* [=$526,795.15]. Registered offices: 3, Great Tower street, E. C., London.

REPLACING "FICUS" WITH "HEVEA."

THE Selangor Rubber Co., Limited, in view of the better results attained from *Hevea* than from "rambong" (*Ficus*) rubber, have decided to cut out the latter, having already interplanted it with *Hevea*. The Consolidated Malay Rubber Estates, Limited,



WELL DEVELOPED SIX-YEAR-OLD "CASTILLOA" TREE.
[On one of the estates of the Chiapas Rubber Plantation Co., in Chiapas, Mexico. The figure to the right of the tree is Mr. W. H. Thompson, connected with the company—a gentleman 6 feet tall.]

who have 3,343 "rambong" trees, some of which have begun to yield, have decided to extract from them as much latex as possible and gradually replace them with *Hevea*, for which they consider their land better adapted.

RUBBER PLANTING IN THE FAR EAST.

THE Golden Hope Rubber Estate, Limited, marketed during 1907, 4615 pounds Pará rubber and 976 pounds "rambong" (*Ficus clastica*)—total 5391 pounds—which sold at an average of 3*s.* 7⅓*d.* [=88.6 cents]. The average yield per tree of Pará rubber was 5½ pounds, dry. Rubber seeds and plants sold worth £2295 3*s.* 4*d.* The company also continued to market coffee. Dividend declared, 6 per cent. Rubber sales for the preceding year, about 2400 pounds; dividend, 5 per cent. At the second annual meeting (London, April 8) it was voted to increase the capital from £40,000 to £50,000.

At the fifth annual meeting of The Pataling Rubber Estates Syndicate, Limited (London, April 8), the rubber crop for 1907 was reported at 58,064 pounds, against 43,310 pounds in 1906; average net price, just over 3*s.* 8¼*d.* [=89.7 cents]. Dividends to date: 20 per cent. for 1905; 40 per cent. for 1906; 35 per cent. for 1907. The cost of tapping rubber in 1907 was 16½ cents (silver) per pound, against 22½ cents in 1906. Profits were smaller for the year, however, since the average price obtained in 1906 was 5*s.* 1 7-16*d.* [=$1.24⅔].

The Rubber Estates of Johore, Limited, at the end of 1907 had planted 1973 acres in rubber. It is intended this year to increase the acreage to 3000. The expenditure during 1907 for development and upkeep reached £18,870 1*s.* 7*d.*

The Linggi Plantations, Limited, in the Malay States, collected in 1907 from their "Linggi" estate 61,297 pounds of rubber, against 17,228 pounds in 1906. From "Bukit Nanas" estate, lately acquired, 49,443 pounds were collected, making a total for 1907 of 110,740 pounds. Net profit for the year, £14,760 [=$71,827.54]. Dividends: 7 per cent. on the preference and 20 per cent. on the ordinary shares.

The rubber yield of the Consolidated Malay Rubber Estates, Limited, in 1907 was 63,615 pounds, from about 200 acres, averaging 3.62 pounds per tree. The company have now 1,596 acres under rubber. Last year's yield was 32,693 pounds. The dividend for 1907 was 10 per cent., the same as in the preceding year.

The Sambas Rubber and Gutta-percha Co., Limited, registered in London last autumn to develop rubber plantations at Borneo [see THE INDIA RUBBER WORLD, November 1, 1907—page 43], at a meeting in London on February 28, decided on voluntary liquidation—presumably on account of a defect in the title of the properties to be acquired.

Mr. Francis J. Holloway has resigned as general manager of the Kepitigalla Rubber Estates, Limited, being succeeded by Mr. W. H. Sinclair, the change dating from March 14 last. Mr. Holloway was one of the pioneers in successful rubber culture in Ceylon, and was manager of the Kepitigalla estate, the nucleus of the present £225,000 company, formed in April, 1906.

GOOD RESULTS OF THE SELANGOR COMPANY.

AT the annual meeting (Glasgow, June 2) of the Selangor Rubber Co., Limited, the reports made to the shareholders embraced figures which compare with those of earlier dates as follows:

	1905.	1906.	1907.
Rubber crop, *pounds*	29,750	70,577	120,524
Rate of dividend	20%	40%	41.6%

The average yield per tree was 1½ pounds, but many of the trees were tapped for the first time in 1907, and Mr. W. W. Bailey, the manager, asserts that no other estate in the Malay States has been tapped so lightly as that of the Selangor company. The estimated yield this year is 200,000 pounds. Shares sold recently at 7 times the par value.

A LARGE SIX YEAR OLD "CASTILLOA" TREE.

AN illustration herewith has been made from a six-year-old rubber tree (*Castilloa clastica*), on one of the estates of the Chiapas Rubber Plantation Co. (San Francisco), in the state of Chiapas, Mexico. A distinctive feature of the property shown is that it is a shade grown plantation; that is, the trees are grown in only partial clearing, as against total clearing, burning, and planting in the sun, in vogue on many plantations. This method, it is claimed by the company, costs less in the first place, retains all the natural richness of the soil, and produces a tree with a soft, succulent bark, smooth and shiny. A recent visitor to the estate says: "Most of the sun grown trees that I saw had a hard scaly bark, very different from the shade protected tree."

Taxicabs Bring a New Demand for Tires.

SUCCESS OF THE TAXICAB IN NEW YORK.

AT a meeting in London on May 20 of the company operating the taximeter motor cabs in New York, the service of which was begun in October of last year, it was stated that the business had been making a profit since December, and that 300 cabs were plying for hire. It was anticipated that the result of the first financial year, ending June 12, 1908, would prove very satisfactory. It soon appeared desirable to increase the number of cabs, but the financial stringency was not favorable to raising new capital. The directors, however, borrowed from some banking friends in Paris 5,200,000 francs [$1,003,600] with which to purchase 400 additional cabs, and it was expected to have 700 in operation in New York by the end of this summer.

The London company was incorporated as The New York Motor Cab Co., Limited, but this name could not be used in New York and at the meeting on May 20 it was resolved to change it to The New York Taxicab Co., Limited, to correspond with a name already registered and in use in New York. It was resolved also to authorize the creation of new capital shares to the extent of £300,000, to be issued as required. The original capital was £303,000 [=$1,474,594.50], contributed in equal portions by capitalists of London, Paris and New York .

The New York Taxi-Cab Co. are operating in New York under a state charter granted May 10, 1907, to Harry N. Allen and others, of New York.

The cabs now operated by this company were made by A. Darracq & Cie., of Suvesnes, France, and of the 14-16 H. P. four cylinder landaulette type, weighing 2,530 pounds complete, and costing in New York, duty paid, $2,600. The taximeters used are made under the Popp patents by the Société Générale des Compteurs de Voitures, of Paris. While all of the cabs so far imported have been brought in complete with bodies, the additional cabs ordered by the New York Taxicab Co. will be shipped in chassis only, and bodies for them will be built in the United States, where a dozen or more automobile firms already are prepared to engage in such work.

Pneumatic tires are supplied to the New York Taxicab Co. on mileage contracts, each tire being numbered, and a representative from the contracting tire company checks the record of the mileage run. The company are building a garage to hold 800 cars, and to be completed by September. A convenience connected with their service is a system whereby any person desiring to call a cab may telephone from any part of the city to a central office, whence the order is transmitted by the company to the cab station nearest the intending patron.

One other important taxicab service in New York is that of the New York Transportation Co., controlled by and supplementing the street railway system of this city. They have in operation 50 cabs made by the Société des Automobiles Delahaye, of Paris, in conjunction with some 400 electric hansoms and broughams of American make that have been in service for a number of years. The imported cabs, of the 8-10 H. P., two cylinder landaulette type, have been fitted with American tires and German "Cosmos" taximeters.

About a dozen smaller concerns have been incorporated, with capital stated at from say $50,000 to $500,000, to operate taxicabs in New York, but for the most part they are not yet actively in the field. Besides, taxicab services are being organized by hotels, restaurants, and the like, primarily for the benefit of their patrons.

AN AMERICAN TAXICAB INDUSTRY.

THE success of the French taxicabs on this side of the Atlantic has encouraged a number of American automobile firms to prepare for their manufacture. The E. R. Thomas Motor Co. (Buffalo, New York), are reported to have installed a plant and increased their force with a view to building 1,000 motor cabs this year, and it is understood that their product will be used by most of the companies organized lately to operate taxicab services in the leading American cities. The American Locomotive Automobile Co. (Providence, Rhode Island), were referred to recently as engaged in filling an order for 100 of those vehicles for the Waldorf-Astoria Hotel, in New York.

The fact that cabs have been in less demand in the past in American than in foreign cities, no doubt, has been due in considerable measure to the higher charges. Now that lower prices are coming in with the taximeter, it is possible that a reduction as regards the use of cabs is at hand, especially as the motor cab has notable advantages over the horse drawn vehicles. At any rate, not only the French manufacturer already referred to on this page, but other foreign companies are seeking a market in America.

Not the least interesting feature of the introduction of the taxicab in American cities is the prospect that before long every detail of the vehicles used will be of American manufacture—chassis, bodies, tires, and even taximeters. Already at least two American taximeters have been brought out that give promise of finding a permanent place in the market.

TAXICABS IN EUROPEAN CITIES.

MR. R. J. MECREDY, the veteran Dublin cyclist and now editor of *The Motor News* of that city, visited London in May and wrote in his paper of his astonishment at the enormous increase in the number of taxicabs to be seen in the streets as compared with the November preceding. "They seem to be everywhere and were very seldom standing idle. At the present rate of increase the horse drawn cab will soon be almost extinct in the metropolis." He learned that an excellent business was being done, and that some of the cab companies were making large profits. Mr. Mecredy points out numerous advantages on the part of the motor cab over the motor 'bus. "The latter," he says, "are so enormously heavy and cumbersome that the wear and tear are out of all proportion to the work accomplished, tires alone being consumed at a most alarming rate."

The General Motor Cab Co., Limited, of London, reported net profits for the six months ending November 30 last of £41,887 [$203,843], with an average of 306 cabs on the road, or an average of 15 shillings [$3.65] per day, six days in the week. For the most part the profits of London taxicab companies are not available in detail, but their shares, as a rule, command a premium, and an evidence of their success may be found in the "boom" in taxicab enterprises throughout Great Britain.

A recent report was that there were in use on the streets of Paris probably 2,250 taxicabs, of about twenty different makes, mostly French. The financial results are understood to have been satisfactory. The number of such vehicles in Berlin on a recent date was stated to be less than a few months previously, due to the failure of several operating companies that had entered the field with insufficient capital, but the most trustworthy data at hand points the growing popularity of the taxicab among those who once become accustomed to it.

The India-Rubber Trade in Great Britain.

By Our Regular Correspondent.

THE important lawsuit of Huttenbach *v.* The North Western Rubber Co., Limited, is not yet finally disposed of, as the verdict given for the defendants by Mr. Justice Walton, in London, has been appealed against. While, therefore, not yet at liberty to comment on the main issues involved, I may remark that this case by no means stands alone as regards disagreement between buyer and seller of this comparatively new commodity. Though the North Western company have the reputation of being large buyers of pontianak in Europe, considerable sales are being regularly affected in other quarters, arbitration being resorted to in accordance with Liverpool custom when differences arise. Although I am by no means satisfied that chemical analysis could be usefully adopted in transactions with the ordinary brands of raw rubber, yet I think that in the case of Pontianak—or jelutong, or palembaug, as it is now variously termed in Liverpool—analysis would be decidedly useful in settling the question of quality. At present the broker or arbitrator merely rubs up a bit of the stuff in his hands in order to judge of the quality. Its value is appraised according to its degree of plasticity or adhesiveness. If it crumbles to powder in the hand treatment, it is at once judged to be low quality. No doubt this test, which has convenience and speed for its recommendations, gives an approximate idea of the amount of rubber present, but it seems to leave rather too much to the personal equation of the operator. A broker to whom the suggestion of chemical analysis was made, replied that he would not give a fig for it. Quite possibly in the case of many transactions it would not be worth the trouble and expense, but there is no doubt that analysis would give accurately what the broker's test gives only approximately. The impurities, except water, which is certainly very variable, and as a rule only trifling in amount, and the proportion of rubber to resin, can be determined without difficulty as a useful index of quality. It is a common idea in some quarters that there is no rubber present, but this supposition finds no support, as far as the samples which have passed through my hands are concerned, at any rate.

PONTIANAK.

IN THE report of the German Rubber Manufacturers' Central Verein, I note that Dr. Ditmar advocates the establishment of a technical school for the rubber trade. He is ready, it appears, to take up the duties of the directorship thereof, presumably on terms, though this consideration is not referred to. A technical school devoted wholly to the interests of the rubber trade seems rather a large order, and I am not at all sure that such an institution is necessary or desirable. At any rate, before proceeding to this extremity, one would have thought that classes or instruction of some sort would be given at existing technical schools. I don't know what has been done in America, but in England the rubber manufacture is not yet included in the long curriculums now established at the leading technical schools. It has certainly been suggested by some British enthusiast that we should have a special establishment for training rubber chemists, but I should like to know what is to become of the product, seeing that only two or three appointments are available a year, and some of these at salaries which are anything but tempting. Germany, I understand, is now viewing with some degree of alarm the very large increase in the number of university students in recent years, and the overcrowding of all the professions. If the education enthusiasts in this country had their way, we should soon be on the decline, as despite the introduction of labor saving machinery, nearly 80 per cent. of the productiveness of the country comes from manual labor. In nine cases out of ten the object of seeking higher education is in order to command higher payment. This end is attainable when there are only a few in it, but when large numbers are educated up to professional standards the natural thing is that employees take advantage of the competition and offer very disappointing rates of pay. This is what is now going on all over England. But not to dwell too much on the general, it would be interesting to know who the rubber technical school is to educate, and who is to benefit most from it. It is a common saying that educated workmen are not wanted as long as they can do their work all right, and as the essence of success in the rubber business depends upon details, including changing markets, which could not receive proper attention at a school, it is pretty clear that the graduate of the school would have to begin over again at the factory when he got his appointment. Hence it would seem that, in view of the limited amount of really useful information which is to be obtained outside the factory, the establishment of a branch in connection with rubber at an existing technical school is all that the situation warrants, and although I may perhaps be too pessimistic, I do not foresee a particularly bright future for those who attend this special branch if their number is not kept within strict limits.

TECHNICAL SCHOOL FOR THE RUBBER TRADE.

I MUST confess to not being familiar with the boot manufacture, though I am acquainted at second hand with the fact that large quantities of rubber solution—or cement, as I believe it is termed—is made in American factories, especially for use in the boot trade. Evidently a somewhat similar business is carried on in England, as I hear that quantities of special rubber solution are being supplied to British boot manufacturers by a German firm. This is said to be a special quality of solution, though I should not imagine that there can be anything about it which debars home rubber works from supplying it on equally advantageous terms. The other day I had an inquiry from Spain for a process of making boots from cardboard. It was pointed out that the particular town was characterized by sunshine and bombs, and that the strong English leather boot was not really an essential. I was unable to give the information required, but should think that rubber cement would be useful in a cardboard boot.

RUBBER SOLUTION.

ALTHOUGH owing to the fall in price of raw rubber at the end of last year, a reduction in the price of tires was quite natural, other influences besides a wish to benefit the public have prompted the actions of the principal tire manufacturers in the reductions which have taken place. To put it bluntly, there has been an internecine war on the part of certain firms to recover business lost to successful competitors. That where one firm has announced a 10 per cent. reduction, another has responded with a still further reduction, and so the thing has gone on until it is now generally recognized that the policy is a somewhat suicidal one. If the price of rubber had been the sole factor in causing these reductions, one would expect an announcement of higher prices, now that markets are up again, but this is not

MOTOR TIRE NOTES.

to be expected just yet, though I think it may be taken that no further reduction will be made. Of course, the motorists have benefited always, supposing that there has been no reduction in quality, but the advantage to the trade is not so apparent. In fact, one dealer is emphatic that instead of buying tires eagerly when the reduction is announced, the motorist decides to wait for a further reduction, and that this frame of mind has been all against the expected accession of business.

I hear nothing but glowing accounts of the progress made by the Kempshall tire in popular estimation, and this in spite of their price being considerably above that of the well-known makes, which have been so long on the market. As previously mentioned, this tire is made solely by Messrs. Charles Macintosh & Co., Limited, though it is quite distinct from their well-known Macintosh tire.

The Collier beaded edge tire is now being made with a rubber nonskid, the extra cost of this tire over that of the ordinary round tread cover being from all accounts amply justified. With regard to the nonskid question generally, it seems to be the fact that the all rubber nonskid tread is knocking out the metal studded form, and it seems a fairly safe surmise that in two years' time the metal studded tire will have become almost extinct. This does not apply to the chain attachment, as I understand these are still in considerable demand. What we shall probably see in a year or two hence will be the rubber nonskid in general use with the chain attachment in demand where the exigencies of particular roads necessitate it.

If the weather was the factor of importance in the situation, the sales of tires should be in advance of last year, which was a very wet one. Business generally, however, is not so good and there will be less money to spend. Although we have had some weeks of fine hot weather, the late Easter seems to have established a record for cold and snow, a good many motorists having a rough time of it. I myself had the novel experience of spending the night at a farmhouse in Scotland, on account of tire troubles, impending darkness, and heavy snow. The farmer, by the way, was under the impression that rubber was dug out of the ground, an idea which was not based on reading a recent paragraph in THE INDIA RUBBER WORLD about a stratum of rubber having been struck at depth during boring operations.

PERSONAL.

DR. CARL WALTHER THIEL, F. I. C., whose retirement from the scientific staff of the Harburg-Vienna rubber works, at Harburg, was mentioned in the last INDIA RUBBER WORLD, somewhere about a decade ago, was chemist at the Manchester works of F. Reddaway & Co., Limited, and made many friends in that district, who doubtless will be interested to hear of his recent move. On leaving Manchester he first took up an appointment at the Calmon rubber and asbestos works at Hamburg, proceeding thence to the well known Harburg company.

DROYLSDEN RUBBER WORKS.

I NOTICE that a non rubber printer's blanket has been patented by Messrs. Harris Markus and Edward Turner Whitclow. The new blanket is built of layers of woven cloth and a composition of glue, water, and vegetable oil, and is said to withstand the deleterious action of printer's ink better than is the case with the ordinary rubber blanket. The position is somewhat analagous to that in the card cloth manufacture, where composition cards containing glue are now made specially for use in woollen carding machines where the oil acts upon the rubber cards. With regard to the patentees, they are both connected with the Barnewell Machine Co., Limited, now located at the Droylsden Rubber Works, near Manchester. These works were founded over 30 years ago by Thomas Worth, and were known under his name. Later they became the Droylsden Rubber Works, which, on getting into financial difficulties, were sold at auction as a going concern to one or two men well known in the rubber trade in Manchester. They were not, however, worked regularly, and a year or two ago passed into the possession of the Barnewell Machine Co., with which Mr. Harris Markus, formerly of the Fleetwood Rubber Co., was identified. One of the specialties now being produced at Droylsden is Markalite, which is not exactly a substitute, but rather a binding material for use in rubber mixings.

OTHER BRITISH RUBBER NOTES.

CALLENDER'S CABLE AND CONSTRUCTING CO.

THE trading profits of Callender's Cable and Construction Co., Limited, for 1907 were £108,573, against £122,926 in the preceding year and £124,521 in 1906 (the best year in the company's history). The net profits came out at £35,835 [=$174,391], against £54,050 in 1906. The report ascribes to general business conditions the falling off in the company's trade, but points out that they probably had their full share of business to be done. Their two factories for cables and accessories were fairly well employed. A great improvement is reported in the working of the rubber works at Leigh, now owned by the company; the rubber trade has increased and a satisfactory profit has been made on the operations of that branch. The company paid £13,500 in debenture interest (from gross profits), £10,000 in preference dividends (at 10 per cent.), and £26,250 in ordinary share dividends (at 15 per cent.)—the same as for the two preceding years.

PROFITS OF BRITISH COMPANIES.

THE accounts of F. Reddaway & Co. (Manchester) for 1907 show a net profit, after providing for debenture interest, depreciation, etc., of £26,476 [=$128,845.56], out of which the directors recommended dividends of 6 per cent. on the preference shares and 2½ per cent. on the ordinary. The sum of £10,000 was added to the reserve fund, increasing it to £95,000. The amount of debentures outstanding has been reduced to £138,759.

Claudius Ash, Sons & Co. (1905), Limited, report that business was well maintained during 1907. The profit was £84,747, against £83,359 in 1906. The dividend of 5½ per cent. on the preference shares and 8 per cent. on the ordinary shares amounted to £52,820 [=$257,548.53], the same as last year. Added to reserve £20,000. The business is the manufacture and sale of dental rubbers and other dentist's materials.

DRIVING APRONS IN THE HOUSE OF LORDS.

THE British house of lords has been called upon to say the final word in a patent infringement suit relating to a motorist's driving apron—"particularly waterproof aprons, by which the driver's feet will be perfectly protected from rain." Robert Arnot, of Edinburgh, assignee of patent No. 16,509 (1902), on such aprons, sued the Dunlop Pneumatic Tyre Co., Limited, alleging infringement. The court decided that, were the patent valid there would have been infringement, but that the invention in question has been disclosed by an earlier patent. Arnot appealed to the house of lords, where the court decision was confirmed, and the appeal dismissed.

VOLEMITE.

A MEETING of the shareholders of Volenite, Limited, was to be held in London on June 3 to hear an account of the winding up, from the liquidator. About seven years ago, this journal, in mentioning a windup of the company and reconstruction then in progress, spoke of Volenite, Limited, as "making a fresh bid for popular favor in connection with a material into which Pontianak gum is said to enter largely."

New Rubber Goods in the Market.

FOUNTAIN SYRINGE BAG WITH CLOSING TOP.

A NEW syringe here illustrated is offered to the trade in the belief that it will appeal particularly to neat and dainty women. The ordinary open top fountain syringe, if left hanging in the bathroom for awhile, as often is the case, will accumulate dust and impurities inside the bag, which will be injected with the fluid when the syringe is again used. In

No. 25 W. T. Co. RAPID FLOW FOUNTAIN SYRINGE.

the article illustrated the flap, with snap button closure, keeps out any dust or dirt, while the wide opening of the bag permits it to be turned inside out for thorough cleaning. The flap is also convenient as a holder for the tubing when not in use. The large handle is convenient for holding it as well as for hanging it up. This syringe is put up in an attractive box. [Whitall Tatum Co., New York.]

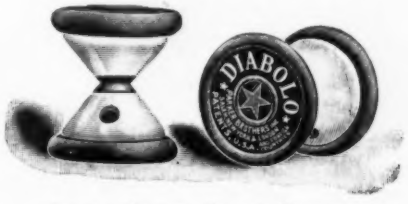
THE NEW KEMPSHALL GOLF BALLS.

THE distinctive feature in construction of a new line of golf balls is based upon the decision by the manufacturers that the action of a rubber cover in connection with a liquid center produces a livelier ball than has been made hitherto. At the same time the rubber or cushion cover is referred to as being exceptionally durable. The illustration relates to the Kempshall Water Core ball, concerning which golfers are reporting that with its use they are reaching greens in two strokes which previously required three. The newest product of the same company is the "L. C." or Liquid Center ball. In the center of each of the two brands is a small rubber bag filled with about 1 ounce of water, which is held under compression by rubber sheeting wound thereon under great tension. [The Kempshall Manufacturing Co., New York.]

WATER CORE GOLF BALL.

RUBBER IN THE GAME OF DIABOLO.

ON account of the growing popularity of the game of Diablo, in America as well as in Europe, there is a prospect that an important new demand for rubber will result. This is an outdoor sport suited to young or old, and one that can be played without any expense for laying out or equipping grounds. The outfit is not expensive and is easily carried about, and is always in readiness. These advantages have contributed materially to making popular a new game, based upon an ancient Chinese game, which a French inventor, Gustave Philippart, has lately patented, the date in America being June 5, 1906. Different materials are used for the bobbins—wood or celluloid for the cones and steel or brass for connecting rods—but rubber is used

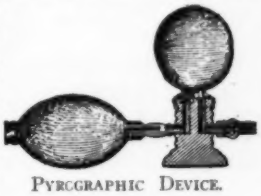


RUBBER CAPPED DIABLO BOBBINS.

for capping them all, regardless of the price. The rubber aids in the perfect balance and increasing spin, and protection of the periphery. The outfits vary in price from $1 to $12, according to the materials used in construction. [Parker Brothers, Inc., Salem, Massachusetts, and New York.]

MILLER'S PYROGRAPHIC DEVICE.

THE accompanying illustration will serve to indicate the principle of construction of a new pyrographic or cautery device. It comprises a pumping bulb provided with a valve; a member provided with a pair of projecting nipples, one receiving the pumping bulb and the other an eduction tube. The nipples referred to communicate with the detachable distensible storage bulb at the top of the device, as shown in the drawing. This apparatus, which has been referred to as superior to any other in its field, is the subject of United States patent No. 888,833, issued to Thomas W. Miller, Ashland, Ohio.



PYROGRAPHIC DEVICE.

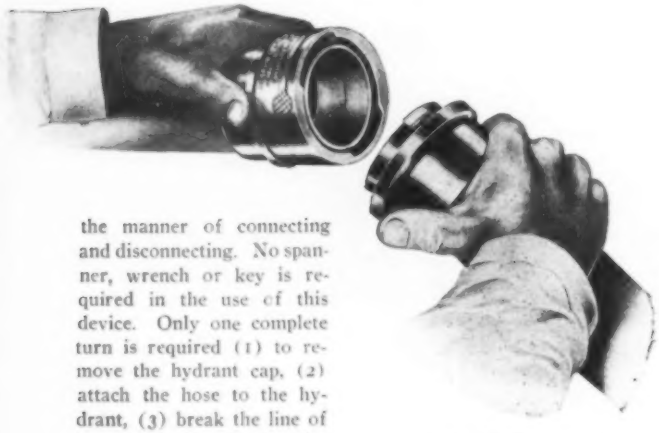
"THE LITTLE WONDER" SYRINGE.

THE article here illustrated can be changed in a moment from a small handy hot water bag to an efficient and sanitary syringe. No other syringe on the market is so convenient in size, and it is equally light in weight. The steady and continuous flow of liquid through the tube, when in use, prevents any injection of air, and the manipulation by pressure of the hand controls perfectly the force of the spray. The large opening of the bag renders it particularly easy to keep clean. The "Little Wonder" can be folded in a fine moisture proof silk case, 6 x 6¼ inches, easily carried in the pocket or traveling bag. The clasp by which the mouth of the bag is closed is one of the special features of the invention here described. [The Western Specialty Manufacturing Co., Flatiron building, New York.]

"LITTLE WONDER" SYRINGE.

THE ANDERSON FIRE HOSE COUPLER.

A NEW device which has been adopted by very many fire departments is the Anderson patent coupling. This is made standard, but can be supplied to fit any equipment now in use, and the system is referred to as being in use in more than 1000 towns and cities. The cut shows the coupler attached to the hose and



ANDERSON COUPLER.

the manner of connecting and disconnecting. No spanner, wrench or key is required in the use of this device. Only one complete turn is required (1) to remove the hydrant cap, (2) attach the hose to the hydrant, (3) break the line of hose, and (4) put on the nozzle ready for water. But with the average screw coupling and screw hydrant as many as 20 complete turns are required. In addition to the ease of working the Anderson coupler and the saving of time through its use, the connection is sure, and the greater the pressure the tighter the joint. The Western trade is supplied by the Anderson Coupling and Supply Co., Kansas City, Kansas. [The Eastern Coupling Co., Camden, Maine.]

"VELVETEER" EAR AND ULCER SYRINGE.

THE "Velveteer" ear and ulcer syringe represents in its construction a departure from the usual American practice. It follows out the shape of the imported types, but has been improved by the addition of the pure gum tip. The object of this

THE "VELVETEER" SYRINGE.

tip is to make the syringe soft and flexible at this point, so that it will readily follow the channel of the ear without irritation or undue pressure, and yet have sufficient body to retain its shape. It is understood to have met the warm commendation of a number of physicians. [The B. F. Goodrich Co., Akron, Ohio.]

THE "ADMIRAL" RUBBER SHOE.

THIS is a lightweight, self acting overshoe of the "invisible" type, the advantages of which are that it "holds tight" to the leather shoe. It is not only exceedingly light, but can readily be put upon the foot without stooping. This shoe, or sandal, differs from others in the market in that instead of having "an endless non-stretchable cord extending entirely around the overshoe" (and thus extending around the heel), it has a flexible but inelastic strip embedded in the vamp above the sole and extending upward at the ends above the shank, forward of the heel. This

THE "ADMIRAL" OVERSHOE.

shoe is protected by United States patent No. 875,144, granted to Augustus O. Bourn. [The Bourn Rubber Co., Providence, Rhode Island.]

RUBBER GRIPS INSTEAD OF COMBS.

THE annoyance which ladies experience from the slipping of combs may be avoided, in certain circumstances at least, by the use of the Can't Slip Pompadour. Reference to an accompanying cut will show that the inside of the braided wire roll is provided with three series of projections or points. These are rubber grips, the gentle pressure of which is referred to as holding the roll securely in place. The roll does not slip or slide—as combs so often do—but stays where it is put. Besides, these rolls are light in weight and in every way comfortable, and are reported to be having a very large sale. [The Thomas P. Taylor Co., Bridgeport, Connecticut.]

"CAN'T SLIP" POMPADOUR.

A NEW TIRE FILLER.

THE "Tire Life" system for tires is the combination of a resilient compound and a small pneumatic tube. It is designed to possess the desirable features of both the solid and the pneumatic tire, without the drawbacks of either. "Tire Life" is described as a compound which, when injected in the inner tube of a tire in a warm liquid state, sets in a few hours, forming a firm but very elastic fit in the shoe. The pneumatic tube may be inflated or deflated as desired, being provided with an air valve which passes through the filling tube. The tube is placed in the tire at the greatest distance possible from the ground, and is therefore fully protected. [Tire-Life Co., No. 66 West Forty-third street, New York.]

GEORGE F. KEHEW, for many years connected with the Pope Manufacturing Co. and earlier with the cycle trade, has gone with the National Sales Corporation (No. 296 Broadway, New York), dealers in automobile accessories and American representatives of Pirelli & Co., the rubber manufacturers of Milan, Italy. Mr. Kehew will maintain headquarters at Detroit, Michigan.

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED MAY 5, 1908.

NO. 886,423. Packing composition for seams of cans. L. C. Sharp, Plattsmouth, Neb., assignor to American Can Co., New York city.

886,482. Substance produced from the gums of certain *Sapotaceæ*. M. M. Dessau, Merton, England.

886,716. Shoe. P. G. Mayhew, Grand Rapids, Mich.

886,798. Fire hose bridge. R. C. Groh, assignor of one-third each to F. Seifert and S. H. Reeves, all of St. Paul, Minn.

886,835. Means for attaching pneumatic tires. A. C. Miller, Chicago.

886,889. Handle grip for cycle handle bars. M. C. Stokes, Hartford, Conn., assignor to The Hartford Rubber Works Co.

Trade Mark.

33,200. National India Rubber Co., Bristol, R. I. The representation of an arrow and an anchor, within a circle surrounded by the words *National India Rubber Co.* For rubber buckets.

ISSUED MAY 12, 1908.

887,295. Automobile tire. W. Weildling, Magdeburg, Germany.

887,454. Dress shield. D. Basch, New York city.

887,687. Dress shield cover. M. L. McConn, Arkansas City, Kan.

Trade Mark.

29,016. Standard Underground Cable Co., Pittsburgh, Pa. The representation of a section of an insulated cable, having a green strand interwoven in the cover. For rubber covered electric conductors, and conductors covered with braid.

ISSUED MAY 19, 1908.

887,941. Low cut or sole rubber overshoe. F. C. Hood, Boston.

887,997. Vehicle tire. E. B. Cadwell, Detroit, Mich., assignor of one-third each to F. Johnston and F. M. Ashley.

888,165. Hose coupling. T. H. Harrington, Wilmot, Ark.

888,214. Tire for the wheels of road vehicles. J. V. F. A. Yberty and E. B. Mérigoux, Royat-les-Bains, France.

888,252. Holding device for rubber shoes. F. P. McAulay, Grafton, N. D.

888,269. Cushion tire for road vehicle wheels. J. Stevens, London, England.

888,302. Wheel tire. F. N. Boughn, Riverside, Cal.

888,345. Pneumatic tire. H. Musclow and W. A. Roberts, Vancouver, Canada.

Trade Marks.

28,374. Osgood Sayen, Philadelphia. The word *Midnight*. For rubber flange packing.

28,376. Osgood Sayen, Philadelphia. The word *Auto*. For rubber packing.

32,152. The Bridgeport Brass Co., Bridgeport, Conn. The words *Phono-electric*. For insulated wire.

32,484. The Bridgeport Brass Co., Bridgeport, Conn. The word *Electric*, lettered in white on a dark background.

32,933. Mica Insulator Co., New York city. The word *Linolac*. For electrical insulating compound.

ISSUED MAY 26, 1908.

888,590. Hose. E. J. Coughlin, Passaic, N. J., assignor to The New York Belting and Packing Co., Ltd.

888,674. Connecting conductor for cables. F. S. Vielé, Pittsburgh, Pa., assignor to Standard Underground Cable Co.

888,833. Pyrographic or cautery device. T. W. Miller, Ashland, Ohio.

888,906. Cushion tire. J. B. Jordan, Nashville, Tenn.

889,038. Bracket hose reel. L. W. Parker, Mobile, Ala.

889,069. Pneumatic tire. C. E. Titus, Springfield, Mass.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the Application, which in the case of those listed below was in 1907.

**Denotes Patents for American Inventions.*

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, APRIL 29, 1908.]

531 (1907). Pneumatic tire with metal protecting band. W. S. Gage, Paris, France.

527 (1907). Inflatable blocks for the use of hairdressers and the like. H. Lichtenfeld, London.

534 (1907). Spare wheel for motor cars. S. Simpson, Exeter.

558 (1907). Detachable rim for pneumatic tires, and for solid tires in single or twin form. G. J. Rackham, London.

574 (1907). Nonskidding device for tires. E. Wyld, Shepperton-on-Thames.

584 (1907). Key for removal of flange of a tire rim. K. Henning, Weissensee, Germany.

*616 (1907). Apparatus for withdrawing wires from tires and inserting new ones. J. Hart, Washington City.

671 (1907). Tire forming shoe. A. E. Vincent, Noisy-le-Sec (Seine), France.

732 (1907). Nonskidding cover for tires. F. T. Edmunds, Parkstone, Dorcetshire.

755 (1907). Elastic tire. E. J. Duff, Liverpool.

771 (1907). Tire charged with water or other nonviscous liquid, mixed with air or other gas. R. K. Gray, Silvertown, London.

799 (1907). Pneumatic tire consisting of a series of butt ended single tube segments. H. Franklin and W. Bates, Luton, Bedfordshire.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MAY 6, 1908.]

845 (1907). Elastic fibrous material for golf ball cores made from animal connective tissue, such as contain ligaments. G. Hoffmann, Bradford.

852 (1907). Golf ball. M. McDaid, Edinburgh.

859 (1907). Sectional tread band for tires, built up in part of hemp or other fiber. E. Rodriguez, Chiswick.

878 (1907). Solid elastic tire or tread of a pneumatic tire formed of open mesh woven fabric, cut bias. I. S. McGiehan, London.

884 (1907). Boot heel having enclosed a hollow cushion of rubber and felt. H. Goodacre, New Plymouth, New Zealand, and two others.

893 (1907). Method of utilizing waste rubber; the process is applicable also for coating or repairing tire treads. W. Price, Liverpool.

*946 (1907). Disk shaped rotary eraser for typewriting work. B. J. B. Mills, London. (Eberhard Faber, New York.)

1,207 (1907). Apparatus for making tire covers. C. Hubbard and C. Macintosh & Co., Ltd., Manchester.

1,208 (1907). Apparatus for molding tires. *Same.*

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MAY 13, 1908.]

1,295 (1907). Material for tire covers, belting, and the like, made by combining fiber and rubber and vulcanizing them together. M. Staamann, Frankfort o/M., Germany.

1,298 (1907). Clip for securing rubber hose to metal pipes. A. E. S. Craig, Caversham.

1,310 (1907). Playing ball with pockets which permit the insertion of a playing member such as a foot, spike, etc. D. Marshall, Cheltenham.

1,316 (1907). Tire rim available for either a wired on or beaded edge cover. B. Blundstone and D. Moseley & Sons, Ltd., Manchester.

1,459 (1907). Non slipping device for tires. A. J. Boult, London. (L. Mangold, Cassel, Germany.)

1,568 (1907). Solid tire. Mitteldeutsche Gummiwaren-Fabrik. L. Peter A.-G., Frankfort o/M., Germany.

1,584 (1907). Detachable tire rim. E. Gerbert, Waltershausen, Germany.

1,648 (1907). Non skidding device for tires. J. R. Trigwell, Streatham.

1,746 (1907). Tire cover with special tread. P. Lansade-Desprez, Lyons, France.

1,753 (1907). Method of attaching pneumatic tires. F. Shaw, Durham, and two others.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MAY 20.]

1,942 (1907). Tire tread. G. E. A. Holdsworth, London.

1,956 (1907). Pneumatic tire with protecting metallic section. E. Kampshall, London.

1,967 (1907). Method of attaching pneumatic tires to rim. R. Chiganne, Paris, France.

2,065 (1907). Artificial rubber for filling tires, making toys and the like. Consists of glue, molasses, glycerine and tar. W. H. Brownlow, Brockville, Ontario.

2,146 (1907). Pneumatic tire with protective band between air tube and cover. F. J. Moran and R. P. Fletcher, Birkenhead.

2,147 (1907). Pneumatic tire. F. A. Ellis, Kennington.

2,157 (1907). Pneumatic tire. A. McLean, Hawkes Bay, New Zealand.

2,177 (1907). Non skidding stud for wheel tires. A. Slack, Sheffield.

2,210 (1907). Spring wheel with hub suspended from the rim by means of compound flexible and rubber elements. L. A. Garchey, Paris, France.

2,253 (1907). Pneumatic tire. W. H. Bird, Wanganui, New Zealand.

2,276(1907). Non sliping attachment for tires. J. H. Tottie, St. Leonards-on-Sea.

2,289 (1907). Use of eucalyptol for purifying rubber. F. W. Passmore, London.

2,313 (1907). Non skid stud for tires. C Payne, Cranbrook.

2,320 (1907). Pneumatic tires. A. C. Clements, Bristol.

2,324 (1907). Tool for applying or removing pneumatic tires. J. F. Pease and J. G. Patterson, Darlington, Durham.

2,338 (1907). Heel protectors. G. L. Porter, Leicester.

2,409 (1907). Pad for boot heel, the feet of furniture, and the like. W. Plowright, Manchester.

2,458 (1907). Golf ball with plastic core. P. A. Martin and J. Stanley, Birmingham.

THE FRENCH REPUBLIC.

Patents Issued (with Dates of Application).

383,431 (Oct. 30, 1907). F. A. Lart. Elastic tire.

383,443 (Oct. 30). Boirault and Boucher. Elastic tire.

383,476 (Oct. 31). F. Reddaway. Pneumatic tire.

383,410 (Oct. 29). F. Kempter. Washing rubber.

383,512 (Jan. 9). P. E. Vuitton. Tire protector.

383,518 (Oct. 19). G. A. B. Bayonne. Vulcanization of tire repairs.

383,602 (Nov. 5). H. J. Scott. Pneumatic tire.

383,645 (Nov. 6). Morrison and Morse. Tire.

383,552 (Jan. 10). Rouxeville. Vulcanizing process.

383,627 (Nov. 5). F. Boegel. Process and apparatus for extraction of rubber.

383,669 (Jan. 14). J. Dupont. Treatment of waste rubber.
383,494 (Sept. 23). F. Meyer. Pneumatic tire.
383,715 (Jan. 24). F. Feldhans. Elastic tire.
383,754 (Nov. 8). E. Remier. Tire protector.
383,757 (Nov. 8). C. A. Mauselm. Tire protector.
383,792 (Nov. 9). H. Daigneux. Attachment of leather protector to pneumatic tires.
383,847 (Jan. 18). P. J. Viel. Pneumatic tire.
383,852 (Jan. 19). L. A. Garchey. Elastic tire.
383,908 (Nov. 13). C. Martean. Elastic tire.
383,911 (Nov. 13). J. F. Palmer. Pneumatic tire.
384,034 (Jan. 23). Société Michelin & Cie. Pneumatic tire.
384,061 (Nov. 16). S. Gonillardon. Vulcanization of tire repairs.
384,197 (Jan. 23). Donnadieu. Pneumatic tire.
384,202 (Nov. 21). E. M. L. Torkington. Pneumatic tire.
384,225 (Nov. 21). A. Debargne. Spring wheel and elastic tire.

[NOTE.—Printed copies of specifications of French patents may be obtained from R. Bobet, Ingenieur-Conseil, 16 avenue de Villiers, Paris, at 50 cents each, postpaid.]

TURPENTINE AND THE RUBBER INDUSTRY.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The forest service of the United States department of agriculture is undertaking certain lines of work in the South with the object of standardizing and grading the products of the turpentine industry. In connection with this investigation it is desired to establish a complete list of manufacturing concerns that use turpentine in large quantities. Statements are found to the effect that turpentine is much used in the caoutchouc industries; also that yellow pine oil is employed as a solvent. The information, however, is not definite. The service would appreciate any data on this subject which you may be willing to place at its disposal. Very truly yours,

R. S. KELLOGG, Chief.

Washington, June 6, 1908.

[VERY little turpentine is used to-day in the rubber industry. A few barrels a year may be used in certain varnishes, but the amount is so small as to be hardly worth looking up. The same is true of yellow pine oil. In the early days of the rubber manufacture, before the discovery of vulcanization, turpentine was very largely used as a solvent of rubber. To-day the solvent largely used is naphtha.—THE EDITOR.]

RUBBER FOR ARMY BALLOONS.

THE United States army signal service recently called for bids for the construction of two balloons for army use, one ta have a capacity o 1,000 cubic meters [=35,316 cubic feet] and the other 540 cubic meters [= 19,070 cubic feet]. A letter to THE INDIA RUBBER WORLD from the chief signal officer says:

"The specifications provide that the material for the gas bags will be made of a fabric of American manufacture, made by rolling together two layers of silk having a layer of rubber between. No specification for this material has been prepared. It is manufactured in a great variety of forms in Europe, but in the United States it is a new industry. This office has been informed that some rubber manufacturers in the United States have made satisfactory samples, and other manufacturers are interested in the subject if there is prospect of a market. It is with a view of developing this industry in the United States that the specifications for balloons calls for material made in the United States."

RUBBER FOR AIRSHIPS.

ACCORDING to descriptions to hand of the "Republique," the successor to the lost French airship, "La Patrie," the new ship will measure 231 feet in length and 45 in width. The capacious measurement will be covered with a "skin" made of thin, but exceedingly strong, yellowish cloth, covered with a preparation of caoutchouc. However thinly, therefore, the caoutchouc or rubber coating be laid on, the quantity used must be considerable, and, should the use of airships increase, the demand for rubber suitable for coating "skins" will increase accordingly, especially if the "Republique" proves a success.—*Tropical Life.*

THE LATE MONROE SEIBERLING.

FOR various reasons the name of Monroe Seiberling will pass down into the manufacturing history of the central West as a leader, and in some ways the leader, aside from his considerable rubber interests. After living 28 years on the farm upon which he was born in Summit county, Ohio, he went to Akron, where he engaged in the manufacture of flour, strawboard, and other commodities. He had the perception to see correctly the advantages of new and untried fields of manufacture. At the beginning of the use of natural gas in Indiana he was the first to take advantage of its utility, and built plate and window glass works at Kokomo and other places in that state, all of which were large, for Monroe Seiberling always had a decided aversion to anything on a small scale. After the celebrated McKinley tariff bill was passed he was the first, or one of the first, to build a tin plate mill, from the ground up, in the United States, and operated it successfully.

MONROE SEIBERLING.

It was owing to his foresight and determination to take the initiative that he started a number of his manufacturing enterprises, notably the Indiana Rubber and Insulated Wire Co., at Jonesboro', Indiana, which has been in successful operation from the start, many years ago. In 1896 he organized and started the Peoria Rubber and Manufacturing Co., of Peoria, Illinois, of which he was president and general manager, and surprised everyone who knew him by the marked success he made of his "Peoria" tire, during 1896 and 1897—a line of business of which no one credited him with knowing anything. The Peoria plant was situated a mile from the nearest street car line, but a small affair like that did not bother Mr. Seiberling, and he promptly built the shortest steam railroad in the United States. He certainly believed in the old saying that difficulties were only made to be overcome and he was unique in the task of overcoming them.

Mr. Seiberling died February 25, 1908, at his home in Oak Park, Illinois, at the age of 69. He is survived by eight sons and daughters—Mrs. Charles J. Butler, of Detroit, Michigan, whose husband is president of Morgan & Wright; Mrs. F. L. Kryder, Akron, Ohio; Ella S. and Grace Seiberling, Oak Park, Illinois; and the sons, Alton Grant, Kokomo, Indiana; Fred A., Oak Park, Illinois; Laird H., Marion, Indiana, and George W., Detroit, Michigan.

BRITISH COLUMBIA newspapers report the successful issue of a suit brought by the Dunlop Tire and Rubber Goods Co., Limited (Toronto), against certain parties in that province who were alleged to have infringed the Dunlop patent on pneumatic bicycle tires.

THE EDITOR'S BOOK TABLE.

GOUVERNMENT GENERAL DE L'AFRIQUE OCCIDENTALE FRANCAISE. Rapport Agricole pour l'Année 1906. Par Yves Henry. Paris: Augustin Chalamel. 1907. [Paper 8vo. Pp. 310.]

THE modern French colonial service appears to be based upon an exceptionally intelligent system, and though it has briefer history than the colonial administrations of some other powers, good results have been realized and constant improvement is apparent. The economic developments of the colony is always to be kept prominetly in mind, and at the same time the administrators work without friction with the natives, whether in Africa or in the Far East. Notable work has been done by Monsieur Yves Henry, director of agriculture for the colonies and inspector of agriculture for French West Africa. The present volume, relating to the work in the latter administration, devotes no little space to the subject of rubber—the native and exotic species, the work in experimental gardens, the planting stations established, and other like matters. French West Africa is rich in rubber, both as to the number of species of value and the area covered by them, and already this region yields an increasingly large amount for export—now equal at least to the output from the Congo Free State. The purpose of the government is to extend this production, while conserving the native trees and plants, and also to stimulate the rational planting of rubber, one means to which has been the establishment of practical rubber planting schools. Monsieur Henry has been in charge of this work for a number of years, and what he has accomplished entitles him to be regarded as among the most notable workers to-day in the field of intelligent exploitation of crude rubber.

MORE. A STUDY OF FINANCIAL CONDITIONS NOW PREVALENT. By George Otis Draper. Second edition. Boston: Little, Brown & Co., 1908. [Cloth. 12mo. Pp. 1 + 246. Price, $1.]

THE majority of financial literature, says the author of this book in his preface, is written by men who have never made actual value in product, never handled material funds, never known the peril in large financial risks, the joy of substantial material success, or the bitterness of severe financial loss. Mr. Draper, long known as the secretary of the Draper company, of Hopedale, Massachusetts, is at least a man of practical training in a good school. His book, instead of being a treatise, is a series of plain talks on business based upon experience, and forms a readable book, whether from the standpoint of wage earner, or wage payer, or buyer or seller. Naturally every man who works wants more for his effort, every man who buys wants more for his money, every man who owns property would like to add to it. What is the condition of life, therefore, that gives to every class what it seeks within the bounds of reason, and at the same time does not take unjustly from any other class. Mr. Draper has offered no sure rule for bringing about this ideal condition, but the reading of his book would help most people no doubt to a clearer understanding of many of the problems involved in present day business and industry.

ZUR GESCHICHTE DER KAUTSCHUKFORSCHUNG. Zusammenstellung der Wissen schoftlichen Veröffentlichen aus dem Gesamtgebiet des Kautschuks. Von A. Slingervoet Ramondt. Dresden: Steinkopff & Springer. 1907. [Paper. 8vo. Pp. 70.]

THIS brochure may be described as a contribution to the history of scientific research regarding india-rubber, in the shape of a compendium of the scientific publications covering all subjects relating to rubber. The author is connected with the chemical laboratory of the technical high school at Delft. There are chapters on the nature and treatment of latex, the physical and chemical characteristics of rubber, vulcanization, analyses, and so on. It is a compact resume of facts and suggestions, with no fewer than 330 references to authorities, a list of which fills 13 pages at the close of the work, embracing publications as recent as the end of 1907. A useful reference book for any one interested in further research work on rubber who is familiar with German.

RUBBER PLANTING IN MEXICO AND CENTRAL AMERICA. By Pehr Olsson-Seffer, PH.D. [Reprint from *The Agricultural Bulletin of the Straits and Federated Malay States.* Singapore: Kelly & Walsh, Limited. 1907. [Paper. 8vo. Pp. 31.]

SEEKING RUBBER IN BOLIVIA AND OTHER ELASTIC EXPERIENCES. By Quincy-Tucker. [Reprint from the *Boot and Shoe Recorder.*] Dorchester, Mass.: The Author, 1908. [Paper. 8vo. Pp. 42. Price, $1.]

IN CURRENT PERIODICALS.

LES Productions Végétales des Colonies Françaises. Produits d'Exudation. Caoutchouc. By Eugéne Charabot. [Relates to rubber producing species in the French colonies, particularly in Africa, with statistics of production.]=*L' Agriculture pratique des pays Chauds*, Paris. VIII-59 (Feb. '08). Pp. 95-114.

Constitution de Peuplements de Caoutchouc en Afrique Occidentale. By Yves Henry. [Relates to the progress of planting rubber in French West Africa.]=*L' Agriculture pratique des pays Chauds*, Paris. VIII-59 (Feb. '08). Pp. 126-141.

Ceará Rubber in Portuguese East Africa. [By W. H. Johnson.]=*Bulletin* of the Imperial Institute, London. V-4 (1907). Pp. 401-422.

Un Arbre à Caoutchouc dans le Nord du Tonkin. [*Bleekrodea Tonkinensis.*] By O. Làbroy.=*Journal d'Agriculture Tropicale*, Paris. VIII-79 (Jan. 31, '08). Pp. 15-18.

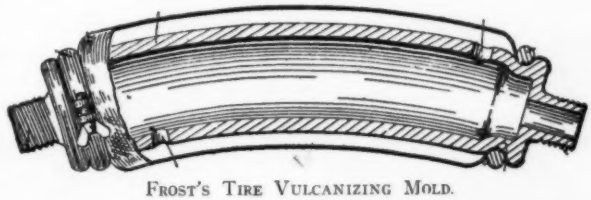
Ueber die Gewinnung von Kautschuk aus getrockneten Kautschukpflanzen. by Dr. Paul Alexander and Dr. K. Bing.=*Der Tropenpflanzer*, Berlin. XII-2 (Feb., '08). Pp. 57-68.

A NEW ORGAN OF THE OIL TRADE.

IN view of the excellence of the French journal *Le Caoutchouc et la Gutta-Percha* it was to be expected that a new journal emanating from the same offices would give evidence of the same high standard of editorship. The first issue of such a new journal, *Les Matières Grasses*, dated May 25, an organ of scientific and industrial interests, covers a wide field, while the list of contributors announced includes experts in connection with the various oils, resins, glues, soaps, varnishes, dyes, colors and so on—in respect both to their sources or component materials and their preparation and industrial uses. The names of several of these writers, either as chemists or as botanists, are familiar in the literature of india-rubber; for example, Dr. De Wildman, an authority on African rubbers, who deals with palm oil. The market and trade reports are particularly full. The publisher and editor is Monsieur A. D. Cillard fils, 49, rue des Vinaigriers, Paris. The terms are 20 francs yearly in France and 25 francs abroad.

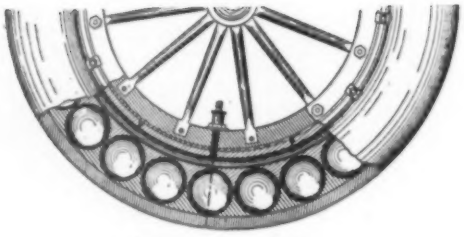
FLEXIBLE MOLDS FOR TIRE WORK.

IF an indestructible flexible mold could be evolved it would find a very wide use. Of course, the cloth used in wrapping hose and tubing is of the nature of a mold and has been in use for many years, but it burns up in time. No doubt it has been suggested many times that if, instead of wrapping this around the hose, it could be woven in several plies and slipped on and off, it would save much time. That,

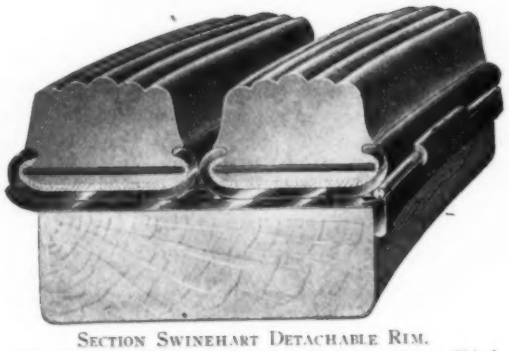


FROST'S TIRE VULCANIZING MOLD.

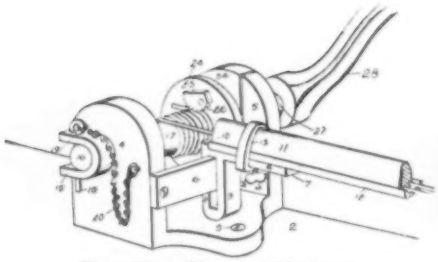
however, would be thoroughly impractical. In the line of tire repairers, however, something of this sort has been attempted and is apparently successful. Harvey Frost & Co., of London, who are patentees of very many types of vulcanizers for tire repair work, have brought out a flexible mold which is really a short tubular canvas jacket arranged to go over the tire, the ends to be bound down by metal clamps. Inside of the jacket is the tire cover, inside of that in turn is a metal mandrel made on a slight curve, with openings allowing the steam to be let between mandrel and the cover.



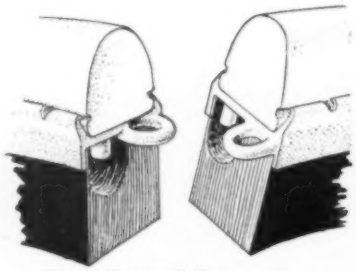
BALL BEARING TIRE.
[Ball Bearing Tire Co., Providence, Rhode Island.]



SECTION SWINEHART DETACHABLE RIM.
[The Swinehart Clincher Tire and Rubber Co., Akron, Ohio.]



TIRE WIRE PULLING MACHINE.
[Patent of John A. Barbrake.]

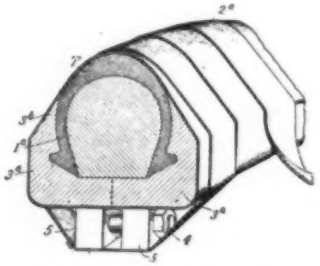


"HALF NELSON" EMERGENCY TIRE.

EMPIRE MOTORCYCLE TIRE.
[Empire Automobile Tire Co., Trenton, New Jersey.]

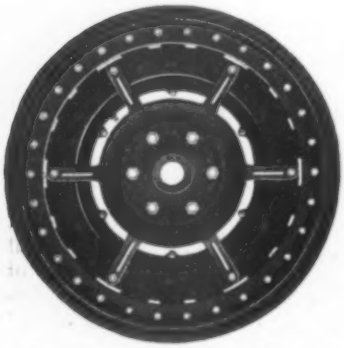
MICHELIN DEMOUNTABLE RIM.

MAKING THE JOINT WITH THE "HALF NELSON."

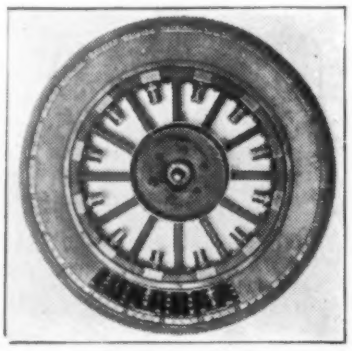


TIRE VULCANIZING PROCESS.
[Patent of Charles L. Pepper.]

EMPIRE MOTOR CYCLE TUBES.
["Empire" tubes made of gray rubber, standard weight; "Empire Peerless" tubes, in red rubber, are heavier.]



RUTHERFORD PNEUMATIC WHEEL.



A PNEUMATIC WHEEL.
[The Flexible Tire Co., Springfield, Massachusetts.]

WHEELER'S STEEL TIRE ARMOR.

Our Page of Tire Pictures.

THE Ball Bearing tire comprises a series of molded pockets, in which a series of balls is placed, in addition to an inner tube. The inner tube when inflated under 30 to 40 pounds pressure compresses the molded section and balls and gives the rigidity obtained from 90 pounds pressure on the ordinary pneumatic tire. The idea is that the puncturing of one or more balls does not impair the usefulness of the tire, as would the puncturing of an ordinary inner tube. In this case the inner tube is so far from the tread that it is practically impossible to puncture it. The molded casing and balls can be assembled, if desired, in any tire of standard make. An accompanying illustration shows the position of the balls. This tire is marketed by Ball Bearing Tire Co., Providence, Rhode Island.

* * *

A NEW tire-wire pulling machine comprises a frame with two standards thereon, an open bearing in one standard and a pivoted bearing in the other standard; a tapered spindle in the bearing adapted to be swung with the pivoted bearing to swing its free end out of the open bearing, and adjacent tire supporting bracket, and means for connecting the tire wire with the spindle. United States patent No. 881,651 has been granted for this invention to John A. Barbrake, of Canton, Ohio.

* * *

A NEW method of vulcanizing the covers of pneumatic tires consists in supporting the cover upon a core, clamping the cover in position on the core with the tread portion exposed, placing a porous covering over the exposed surfaces of the tire cover and in contact therewith, and subjecting the cover so supported and clamp to the process of vulcanization. A patent on this process has been granted to Charles L. Pepper, of Indianapolis, Indiana—No. 882,341.

* * *

THE Flexible Tire Co. (Springfield, Massachusetts) have developed a wheel for automobiles in which springs are substituted for air for the purpose of rendering the tire resilient. This is the invention of William G. Marr, the president of the company. These wheels are built with a steel band having cylinders projecting radially from the wheel; into these are fitted steel pistons or sliding spokes of great strength. Over the metal band and supporting a sectional outer rim are springs guaranteed to stand any strain to which they may be subjected. The wheel differs little in appearance from the wheel equipped with standard tires. An accompanying illustration gives a general idea of the appearance of the wheel. In this picture the rubber is cut away in one place to show the position of the springs.

* * *

EMPIRE Automobile Tire Co. (Trenton, New Jersey) are making two styles of inner tubes—endless and butt end. The butt end tube is especially convenient for use in the rear wheel of a motorcycle, permitting the changing of tubes without removing the wheel from the frame. This company's tire tubes are furnished in two grades and weights. The Empire grade tubes are of standard thickness and weight. The Empire Peerless tubes are made from red rubber and are thicker and stronger.

* * *

THE Wheeler steel tire armor for motorcycles, pleasure cars and heavy trucks, consists of an inverted spring steel rim, from 20 to 16 gage, provided with a rubber lining and a tread, the latter being made of a number of plies of rubber. Both lining and tread extend beyond the steel rim and tend to render it sandproof and waterproof. Where blowouts occur safety clamps are provided to retain the armor in place. Both plain and Bailey treads can be obtained for the armor, which can be slipped on the partially deflated tire, and is held securely when the tire is again inflated. Our illustration shows the rim, the rubber lining, and the rubber buttoned tread. The armor can be adapted to either single or double tube tires of any standard make. It is marketed by H. G. Wheeler, Canandaigua, New York.

* * *

THE Rutherford pneumatic wheel has given most satisfactory results recently under severe tests. One was during a tour of a six-ton truck between Stamford, Connecticut, and New York city. The idea of the inventor has been to permit the use of pneumatic tires on heavy commercial vehicles. This device is constructed on the principle of a wheel within a wheel, with a pneumatic tire between them. Two of the principal London companies operating motor buses are referred to as having ordered trial sets of the Rutherford wheel, and it is stated that some of the sight-seeing vehicles in New York are to be similarly equipped. It may be added that the outer tread of the Rutherford wheel is fitted with blocks of wood, metal, or rubber composition, according to the uses to which the vehicle is to be put.

* * *

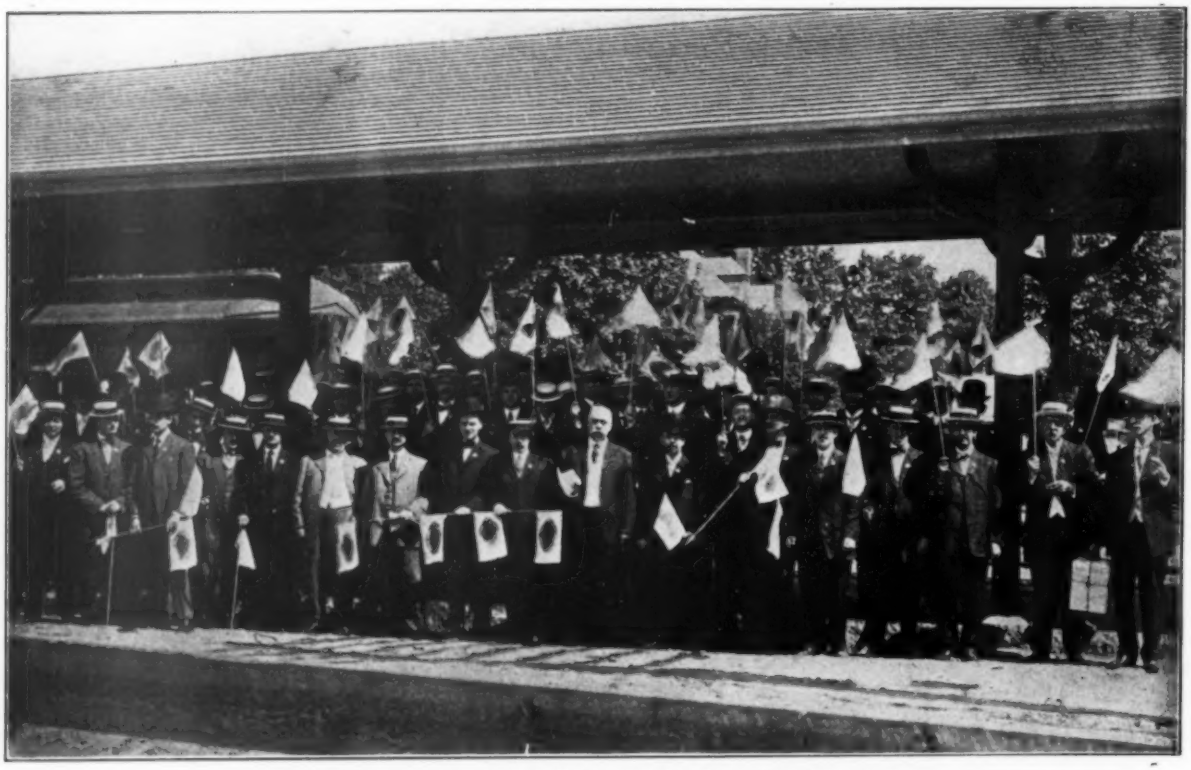
GREAT pains and study have been devoted to the perfection of detachable devices for pneumatic tires, but this has not been the case so much with solid tires for commercial use, though the demand in this field would seem no less important than in the case of automobile tires. The Swinehart Clincher Tire and Rubber Co. (Akron, Ohio) have just brought out a detachable and demountable tire and rim and a rim retainer, patents on which have been applied for. A truck equipped with these devices is not in danger of going out of commission through the loss of a tire, since a new tire already mounted on a rim may be applied in less than 20 minutes. The locking device not only secures the rim laterally, but also wedges it tightly to the retainer, so that there can be no play between the rim and the rim retainer. The endless wire connected with the right hand and left hand threaded turnbuckle can be loosened in less than a half minute.

* * *

THE "Half Nelson" tire has been designed specially for emergency purposes. It is made in several sections—usually six—and the couplings by which the sections are joined into one exactly circular tire consist each of a strong hasp and a double curved hook that cannot come apart except by a peculiar double motion. That is, all the couplings in each tire are of the character described except the last, which is similar to that on gas pipes, except that it is six sided, so as to be easily screwed up with a wrench. Not only is this tire easily and quickly mounted on the wheel, but on account of its being made in sections it can conveniently be stored either in one compartment or in several different places about a car. The tire is marketed by the Half Nelson Emergency Tire Co., Minneapolis, Minnesota.

* * *

F. B. PARKS CO. (Grand Rapids, Michigan), manufacturers of rubber specialties for cycles and automobiles, offer a cement for repair work which is referred to as practically vulcanizing patches in place without heat. It is offered also for repairs on hot water bags, for securing taps and heels on rubber boots, and for splicing rubber belts. The company also make rubber tire repair plugs for bicycles.



ARRIVAL OF THE APSLEY RUBBER CO.'S GUESTS AT HUDSON.

PRESIDENT APSLEY ENTERTAINS.

SATURDAY, the 6th of June, was a gala day for the town of Hudson, Massachusetts, the occasion being the entertainment by the Hon. L. D. Apsley, president of the Apsley Rubber Co., of about 60 guests from New York city, representing two large wholesale houses that handle the Apsley products. The houses referred to were Messrs. Merritt, Elliott & Co., and Claflin. Thayer & Co., both long established in the boot and shoe trade. Mr. Apsley's invitation was accepted by the heads of these firms and their salesmen, the guests leaving New York in a body on Friday evening on one of the Fall River boats. They were in charge of Messrs. William B. Laighton, treasurer of the Apsley Rubber Co., and Frederick T. Ryder, selling agent. The party had supper on the boat, after which a glee club organized among the salesmen entertained everybody on board with an impromptu concert.

After a night on the boat the party arrived in Boston in time for breakfast and were conveyed thence to Hudson in a special car, being greeted on their arrival by Mr. Apsley. An illustration which appears here shows the party in the railway station, after Mr. Apsley's brief speech of welcome. Each of the guests carried a miniature banner on which appeared the Apsley trade mark.

From the railway station the visitors walked to the factory of the Apsley Rubber Co., where all the processes of manufacturing rubber footwear were in progress and were explained in detail, proving of much interest to the men whose business is the selling of such goods. Later the members of the party were taken through the town in automobiles and the principal points of interest shown them. Everywhere were decorations in honor of the Apsley guests. Every business house displayed bunting, flags, or signs of welcome; flags were raised on the public buildings and factories, and many residences were decorated. In fact, all Hudson seemed intent upon helping to make the visitors feel welcome.

HON. L. D. APSLEY.

During the afternoon the New Yorkers were received by Mr. and Mrs. Apsley at their residence, after which they proceeded to Odd Fellows' Hall, the interior of which had been transformed into a banquet room. The decorations covered the walls completely; the window sills were filled with flowering plants; and there was a profusion of flowers on the tables. Back of where the host sat was an evergreen canopy, bearing the word "Welcome" in letters of gold. The ornamental menu card was in the shape of a rubber boot, and included a printed list of the guests. The dinner itself did particular credit to Hudson's caterers. It was served by young men, students at the Hudson high school, who volunteered to assist in the entertainment of Mr. Apsely's guests. The tables were laid for 80 persons, including members of the rubber company's staff.

Mr. Apsley served as toastmaster, and his words of welcome were followed by brief addresses by several of the visitors, all of whom testified to their enjoyment of the occasion, the interest which they had felt

in what had been shown them, and their hope that the new business relations into which they had entered with the rubber company would long continue. One of the speeches was made by Mr. J. R. Vail, who presented to Mr. Apsley, in the name of his firm, Merritt, Elliott & Co., a handsome silver loving cup, suitably inscribed, and which the recipient acknowledged in a happy little speech.

The visitors left Hudson at 5:46 P. M., in charge of Treasurer Laighton—with the exception of the heads of the firms, who remained over Sunday at Mr. Apsley's—and went into Boston, where they were assigned to rooms at the United States Hotel. After supper the party went to Keith's Theater. Sunday's program embraced a sight-seeing tour of Boston, a visit to Revere Beach, and return to New York by a night boat.

Whenever Mr. Apsley plans to entertain or celebrate it is on a lavish scale, and the town of Hudson loyally and joyfully takes hold and helps. And this is as it should be, for not only is Mr. Apsley by far its most distinguished citizen, but as the founder of its largest and most profitable industry, and one who takes a keen interest in the welfare of the whole community, he deserves the devotion of his fellow townsmen. Then, too, he really lives there, is not an absentee as so many of big men of our manufacturing towns are, and in his beautiful home is always hospitable, democratic, interested, and whom he invites, his charming wife as hostess, with rare tact and genuine hospitality, entertains. And this is why the late visitors at Hudson had such a superlatively pleasant time.

It may be added that the character of the two houses named in this report as having lately become customers of Mr. Apsley's company is such as to make of the new connection a testimonial of the higher order to the products of the factory at Hudson. They are among the oldest firms in the trade, and accustomed always to carrying the lines of the best makers.

The two New York stores represented by Mr. Apsley's guests were closed on the day of the banquet, signs having been posted in advance reading—

THIS STORE WILL BE CLOSED
ALL DAY SATURDAY
TO ENABLE OUR SALESMEN TO
VISIT THE
APSLEY RUBBER FACTORY,
AT HUDSON, MASS.

The Hudson *Enterprise* says in an editorial: "The example set by Hon. L. D. Apsley in giving a practical demonstration to the salesmen of his New York customers, of the making of a shoe, is one that might be followed with profit by manufacturers in many lines of goods. It is a fact known to many observant business men that the average salesman, while being almost invariably an agreeable man to meet, and, perforce, a persuasive talker if he is successful, is also woefully lacking in knowledge of the processes required to produce the finished article whose superiorities he sings.

"- - - While life is too short for men to become practical in producing the goods they sell, there are certain points connected with their production which, given as basis upon which to build, equip him as no other instruction could. - - - Certain it is, the New York guests returned home with a better idea of rubber shoes than when they came, and if they hadn't had an enjoyable time it wasn't the Apsley Rubber Co.'s fault."

SOME WANTS OF THE TRADE.

[455] "WHAT can you tell me about a substitute called Terra Alba and who make it?"

[456] "I would like any information which you can give me regarding a substitute by the name of Atmido."

[457] "What do the boot manufacturers in the United States use for dull finishing rubber boots?"

[458] "Where can I get wringer rolls as used in clothes wringers?"

ANOTHER DECISION FOR THE GRANT TIRE.

FOR the second time the Grant tire patent has been the subject of a decision by the United States circuit court of appeals for the second circuit. The decision in each case was written by Judge Alfred C. Coxe, and the purport of both is the same—holding the Grant patent (No. 554,675, issued February 18, 1896) to be valid.

The Diamond Rubber Co. of New York was sued for alleged infringement of the Grant patent on solid tires, by The Consolidated Rubber Tire Co. and The Rubber Tire Wheel Co., the owners of the patent, in the United States circuit court in New York city. A final decree sustaining the patent claims was entered March 2, 1908, from which the defendants appealed. The decision on appeal, in which the decision by circuit court judge is upheld, is dated June 4, 1908. This appellate district, by the way, embraces the states of New York, Vermont, and Connecticut.

Judge Coxe says that the appeal in question is in the nature of a reargument of the questions decided in the case wherein the Firestone Tire and Rubber Co. was sued for infringement of the Grant patent. [See THE INDIA RUBBER WORLD September 1, 1906—page 403; March 1, 1907—page 189.] No new evidence was offered. The counsel were the same, the issues the same. Judge Coxe quotes with approval from the decision of the court below: "That question having once been tried out and a decision made, I do not see what right any other defendant had to go over the same evidence and call upon the court to go over it again, particularly when the decision of the court of appeals is controlling." The decision in the Firestone case on appeal, as already stated, was written by Judge Coxe, and he finds nothing in the record of the Diamond Rubber Co. case to warrant any change in his former decision.

Having disposed of the questions involved in the trial, Judge Coxe proceeds to remark:

"Another volume of 500 pages has been added to the library which has accumulated during the last ten years through the efforts of many defendants who seem determined to use what they, in effect, assert to be a useless device. The indomitable persistency with which these people have fought for the right to use the Grant tire is more persuasive evidence of its merits than the opinion of experts. If the Willoughby, Latta, and other tires [named in the defenses] are as good as Grant's why do not these defendants use them? The almost frantic efforts which have been made to use the Grant tires are inconsistent with the argument that they show no inventive genius, and we are more and more convinced that we were right when we said that 'no successful rubber tire can be made without embodying the distinguishing features of the Grant patent.'"

It will be remembered that a court of the same rank as that named in the preceding paragraphs has reached a different conclusion, declaring the Grant patent to be invalid. In the decree handed down by Judge Coxe, restraining the Diamond Rubber Co., of New York, from any further infringement of the Grant patent and ordering a reference to compute the profits and damages by reason of such infringement, it is stated that nothing therein is intended to enjoin the defendant from handling rubber tires covered by the Grant patent, when manufactured by certain parties having a right to make and sell such tires under a judicial decree in a litigation in federal courts heretofore pending between the present complaint and such parties, wherein it has been judicially determined that said Grant patent is invalid and void. This relates to the case wherein the Goodyear Tire and Rubber Co. were sued by the owners of the Grant patent, and won on appeal.

THE Canfield Rubber Co. (Bridgeport, Connecticut) have been adding a number of specialties to their line of products, including some patented packings, and various articles in the line of mold work.

HOW DOW TUBES ARE MADE.

IN the fine fireproof factory buildings situated at the foot of Thirty-sixth street, Brooklyn, New York, is located the Dow Tire Co., manufacturers of the Dow non deflation tube. Almost every motorist knows of the tube—that is an inner tube containing a shallow pocket about three-fourths of the way around and directly over the tread, which pocket is stuffed with a mixture of paste and feathers. From the first the tube was proclaimed a freak, but it still persists in gaining friends and many motorists swear by it. It was because of some excellent reports concerning it that the editor of THE INDIA RUBBER WORLD visited the factory to see how the work was done. The superintendent, Mr. Jacob Abrahams, who has evolved many problems that had to be solved before this special type of tube could be successfully and economically manufactured, showed the various processes with much enthusiasm.

To begin with, the tube is made upon a mandrel, several thicknesses of rubber being lapped upon each other to form the tube proper; then to form the pocket, a portion of the tube is coated with a soapstone paste which is allowed to dry and the wrapping of the sheet of rubber continued until the proper thickness is secured. In order to avoid blisters and the excessive use of the hand roller the mandrel is held by two men, one at each end, with the sheet of rubber hanging free with weights clamped to the lower margin for tension. The next process is wrapping with cloth to hold the rubber in position during vulcanization. This cannot be done by machinery, as the pocket would slip on its soapstone coating. This wrapping is therefore done carefully by hand, four men being necessary to get the cloth on smooth and tight. Vulcanization is, of course, the next process and is accomplished in the usual way.

The removal of the tubes from the mandrel by compressed air is done in the usual way. The clamp for holding the tube throughout its entire length while a jet of air is forced through the pocket is simple and original, as are also the machines for skiving the ends of the tubes preparatory to making the very ingenius double lapped joint that allows of a continuous pocket all the way round. This joint is made over a short collapsible mandrel, just the size of the interior of the tube, which, after the joint is finished, separates into a series of polished wooden rods about the size of carpenters' pencils, which are easily drawn out through the hole left for the valve stem. By the way, before the joint is made a certain amount of paste and feathers is weighed out and forced into the pocket, where it remains in a lump to be afterwards rolled with wooden rolls to distribute it evenly to all parts of the pocket.

This is roughly the method followed in making the Dow tire, and the busy workmen are certainly making a lot of them. It may be a freak but after all may it not be a good one, and is it not possible that the motorists are even now seeing the dawn of that millenial morn when the punctures cease from troubling and the blowouts are no more?

THE EXTRACTION OF GUAYULE RUBBER.

IN a report by the United States consul at Matamoras, Mexico (Mr. Clarence A. Miller), some details are quoted from a Monterey chemist in regard to the extraction of rubber from the guayule plant. He says that two German chemical processes are in use. One of these is based on the application of alkali and the other on the use of benzol and alcohol. However, the system mostly used by the largest factories seems to be the separation of the rubber from the shrub by boiling at a temperature of about 130° C. [=266° F.] three hours, more or less, and adding to the water caustic soda or simply lime; some also add salt to the lime. These substances are used against the resinous contents of the plant, which are extracted together with the rubber. The Monterey man is quoted as claiming another chemical process which he considers best of all, and which has been adopted in a factory at Saltillo after they had invested several hundred thousand dollars in a boiling plant, but no details are given regarding it. The boiling plant is referred to as being more expensive in construction, but cheaper in operation; its disadvantage consists in the loss of 3 to 4 per cent. of rubber as well as "in the quick spoiling of the rubber, which does not last as long as that chemically produced."

The Matamoras consul says: "In addition to guayule, there are in this country other plants containing rubber, but not enough to pay the expense of the extraction of it. Experiments are being made with the candeliala, which is claimed to contain 3 per cent. rubber, considerable resin, and also a high percentage of wax. Some trial carloads of this plant have been exported to Belgium."

OBITUARY.

CASSIUS M. GILBERT, who died at his home in Cleveland, Ohio, on June 8, was a native of Memphis, Michigan. After a short business experience in New York city he engaged in the wholesale paper business at Detroit, going later to Kansas City and becoming interested in real estate. In 1905 Mr. Gilbert became interested in the reclaiming of rubber. In that year he organized the Aladdin Rubber Co., which established a factory at Barberton (near Akron), Ohio, and was doing a good business in making reclaimed rubber when a fire, in June, 1907, caused a heavy loss, making necessary a complete reorganization of the company.

Mr. Gilbert next became associated with Mr. Charles A. Besaw, and they organized The Gilbert-Besaw Co., of Cleveland, to exploit a new reclaiming process which was referred to in the last INDIA RUBBER WORLD. Success attended Mr. Gilbert's enterprises as a rule, and the business in which he was engaged at the time of his death had apparently an exceptionally bright future. This, by the way, will be continued by those who were associated with Mr. Gilbert in planning it. Mr. Gilbert is survived by a widow and one daughter, Mrs. T. E. Dickenson, of Pittsburgh.

* * *

REGINALD WHALLEY WICKHAM, F. R. G. S., of Gloucestershire, England, early in May died on shipboard between Colombo and Singapore, aged about 58 years. Mr. Wickham became interested in planting in Ceylon about 35 years ago. He resided in Ceylon for several years, and at the time of his death was the owner of a rubber estate there, though the last few years he had spent either at his home in England or in travel through the rubber areas of South America. He had established a reputation as an authority on the conditions of rubber production in the Amazon region. Mr. Wickham was a visitor to New York last year, on his return from a trip to South America, incidental to which he came north through Mexico, visiting a number of rubber plantations in the latter country.

* * *

SILAS B. FOOT, head of the firm of Foot, Schultze & Co., large shoe wholesalers of St. Paul, Minnesota, a firm handling rubber footwear in very large volume, died on May 22 in his seventy-fourth year.

THE growth in commercial importance of Manàos is indicated by the establishment there of a branch of the important Bank of Brazil, of Rio de Janeiro, the capital of which is stated at 70,000,000 milreis [=about $38,220,000]. The Manàos branch was opened in January last and has been proved a success already. Manàos and Pará are on a par as regards their total international trade, but in exports alone Manàos is now in the lead, due to the steady expansion of the rubber trade. The Bank of Brazil, however, is planning a branch for Parà, and another for Santos, the great coffee center.

THE COMING RUBBER EXHIBITION.

[See THE INDIA RUBBER WORLD, June 1, 1908, page 287.]

THE work of organization of the International Rubber and Allied Trades Exhibition, to be held in London September 14-26 next, has made steady progress from the time of its inception, and all indications point to its complete success. In the first place, the expenses were guaranteed by the original group who formed the nucleus of the present management, and it is understood that the returns from the exhibition spaces allotted will exceed the original expectations. In fact, early in the work of preparation it was necessary to look for a more commodious building than the one first selected, and obtain the Olympia, the largest exhibition hall in London. The broad scope of the exhibition and the widespread public interest in rubber which has been developed in recent years, particularly in Great Britain, seem to justify the hope that the attendance will be large.

The enterprise is by no means to be a rubber planting exhibition alone, as was true of the Ceylon Rubber Exhibition of 1906. Such, indeed, was never the thought of the promoters of the Olympia show, but rather to embrace every phase of the rubber interest—crude rubber, manufacturing, and rubber machinery, with all allied subjects. Not unnaturally the rubber planting interest, in view of the success of the Ceylon exhibition, was the first to respond actively to the prospectus of the forthcoming show, but other departments of the rubber trade have gradually given assurances of their support, until now no department is without liberal representation. It was, in fact, the demand for space from the rubber machinery makers that led to the selection of so large a hall as the Olympia.

To-day every country in Europe manufacturing machinery adapted to use either in the rubber goods factory or on rubber plantations is represented in the list of exhibits assured for the Olympia. Likewise leading manufacturers of rubber goods have contracted for space, so that the exhibition is certain to be representative of rubber from every viewpoint. What will be the share of America in this important exhibition remains to be seen, since the correspondence with the various firms on this side of the Atlantic has been conducted from the London headquarters, and a longer time has been necessary for results to be attained than in the case of the European houses.

Visitors to the Rubber Exhibition may be prepared to see rubber plants growing, in every stage from the earliest; sections of mature rubber trees and photographs of entire trees; an exposition of all the methods of tapping rubber trees that have been devised to date, including specimens of tapping devices; demonstrations of the various practices in coagulating rubber; specimens of crude rubber in all known forms, whether "plantation" or "wild"; modern factory practice in the conversion of crude rubber into finished products; and an array of manufactured goods into which rubber enters. The rubber manufacturer will there have an opportunity to study in all its phases the development of the raw materials; the producer of rubber will be able to see what the manufacturer wants in the way of raw materials and by what steps his produce is turned into articles of commercial utility.

THE INDIA RUBBER WORLD has mentioned already the prominence of the president of the International Rubber and Allied Trades Exhibition—Sir Henry Arthur Blake, G. C. M. G., who presided at the Ceylon Rubber Exhibition while governor of Ceylon, prior to which he had been in the service of the British empire as governor successively of the Bahamas, Newfoundland, Jamaica and Hong Kong.

The list of vice presidents embraces a number of gentlemen of note in the development of important interests, including Sir William T. Thiselton-Dyer, K. C. M. G., long director of the Royal Gardens at Kew; Sir Harry H. Johnston, K. C. M. G., the eminent African administrator; the Hon. Mr. John Ferguson, C. M. G., of Ceylon (editor of the *Ceylon Observer*); Professor Wyndham Dunstan, LL. D., of the Imperial Institute; and H. Kerr Rutherford, Esq., chairman of the Rubber Growers' Association (London), and one of the pioneers in rubber culture in the Far East.

The various active committees embrace such men as Sir Daniel Morris, K. C. M. G., commissioner of agriculture for the British West Indies; Gustave Van den Kerckhove, the Belgian rubber expert; Lieut. Colonel Prain, the present director at Kew; Dr. D. Spence, of the Liverpool University; Dr. Pehr Olsson-Seffer, of Mexico; J. Hancock Nunn, Esq., and Alfred Du Cros, Esq., English rubber manufacturers; Dr. Werner Esch and Dr. Fritz Frank, German rubber chemists; Monsieur A. D. Gillard, of *Le Caoutchouc et la Gutta-Percha* (Paris); and others equally prominent in connection with rubber interests in various countries—every name on the list being an additional testimonial to the earnest and substantial character of the undertaking.

One result of the exhibition may be expected to be a new impetus to the international trade in rubber goods, already so important. It will offer the first opportunity which many of the visitors will have had to see compared the kinds of goods made and used outside of their respective countries. Many such visitors doubtless will be able to acquire new ideas, both for introduction at home and to aid in the wider distribution of their products abroad. Hereafter, even more than in the past, competition in the sale of rubber goods will be between countries as well as between factories in any given country, and such an exhibition as that at the Olympia will prove more educational than the great international general exhibitions of recent years. Our London contemporary, in its June 1 issue, refers to the growing volume of the American rubber trade in terms which might prove surprising to those American firms which have been concerned in the past only with the home trade.

THE INDIA RUBBER WORLD will be represented by an exhibit at the Rubber Exhibition, and its Editor is scheduled for an address on the American rubber industry, illustrated by lanterns, and has been requested to give an illustrated lecture on the rubber plantations he has visited.

The London *India-Rubber Journal* says: "No doubt one of the most interesting lectures delivered at the International Rubber Exhibition to be held at the Olympia will be the one to be given by Mr. Henry C. Pearson, Editor of THE INDIA RUBBER WORLD, New York, entitled, 'Synthetic Rubbers as I Have Seen Them.'"

The committee of the Motor Club (which has one of the largest club houses in London, at the corner of Coventry and Whitcomb streets, near Piccadilly Circus) have most kindly consented to make visitors to London taking part in the Rubber Exhibition honorary members of the club. All that is necessary will be to send name and address on arrival in London to the manager of the exhibition to enable him to notify the secretary of the Motor Club, who will then issue the usual notice.

CEYLON AND THE LONDON EXHIBITION.

AT a meeting of the Committee of the Planters' Association of Ceylon (Kandy, March 13), attended by 59 members, it was resolved, in relation to the International Rubber and Allied Trades Exhibition to be held in London:

"That the Ceylon government be informed that this committee is of the opinion that the colony should be strongly represented at this exhibition, and that a sub-committee be appointed to act with the chamber of commerce in arranging details."

The chairman and secretary of the Association, therefore, and five other members were appointed as such sub-committee.

A PLANTATION laborer in the Kalutara district, Ceylon, for stealing rubber worth 50 rupees [=$16.22], was sentenced to rigorous labor for three years.

AN ENGLISH RUBBER MANUFACTURER.

THE portrait on this page is that of Mr. William Maclean Henderson, who, at the last annual meeting of The India Rubber Manufacturers' Association of Great Britain, was elected chairman, after having filled for several years other positions on the official list. This association, as THE INDIA RUBBER WORLD's readers know, may be said to date its conception from the circular on advance in prices issued February 10, 1898, following which the advantages of concerted action among the leading manufacturers led to the formation of the association here named, which may now be said to be in its tenth year. From the beginning the membership included the Ancoats Vale Rubber Co., Limited (Manchester), of which Mr. Henderson is now managing director. Mr. Henderson, for whose portrait acknowledgement is due to *The India-Rubber Journal*, began his connection with the rubber industry with an important Scotch company in the early seventies. It is now over 30 years since Mr. Henderson left home and took a position as representative for the Ancoats Vale company, in which connection he formed many acquaintances in the trade which have since proved of incalculable value in his succeeding business career. After several years Mr. Henderson went over to Messrs. Broadhurst & Co., of Manchester, with whom he likewise had a successful business experience. About 12 years ago he was invited by the directors of the Ancoats Vale company, which had then encountered some embarrassment, to assist in putting the business upon a better basis, and the result was the reconstruction of the company in 1898, when Mr. Henderson became managing director. Since this date the company have made steady progress, and important alterations and extensions have been made, and further additions are now in prospect, all testifying to the capacity for business of their active and effective managing director.

WILLIAM MACLEAN HENDERSON.
[Chairman India Rubber Manufacturers' Association of Great Britain.]

WASTE RUBBER IN RUSSIA.

TO THE EDITOR OF THE INDIA RUBBER WORLD: In your issue of June (page 295) appears, under the heading "Will Old Rubber Shoes Go Higher?" the statement that you estimate the present stock of old rubber shoes in Russia at from 5,000 to 6,000 tons.

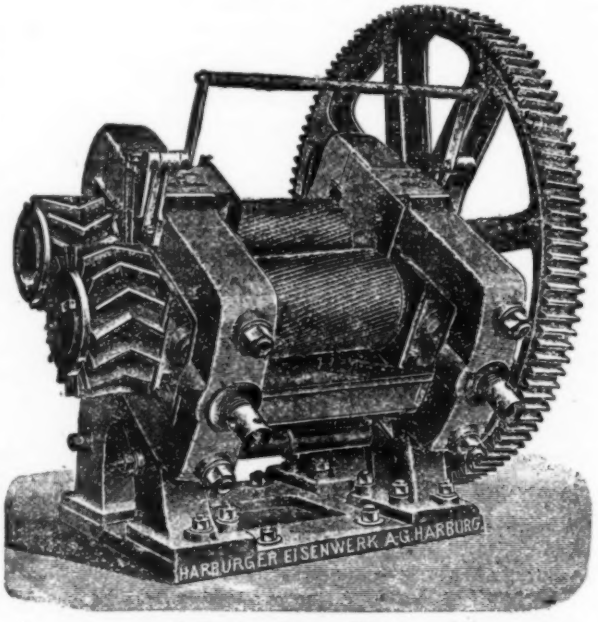
As the largest Russian dealer in this line, I would inform you that scarcely 750 to 800 tons old rubber shoes could at the present time be obtained in the entire territory of Russia, inasmuch as the Russian rubber manufacturers are buying up everything in sight in order to prevent an advance in prices, a situation which is presumably not of great importance for the American market. In fact, only small amounts of old rubber shoes can at the present time be exported from Russia to America, because the Russian manufacturers would at once follow suit as soon as the American rubber manufacturers advance the prices they offer. Russian manufacturers can afford to pay high prices, since they buy old rubber shoes here without having to pay the high export duty of 1.50 rubles per pood. In accordance with the foregoing statements, which are founded on facts, American dealers are right in going slow in the sale of old rubber shoes, and in waiting for higher prices which are sure to come. M. J. WOLPERT.

Odessa, Russia, June 12, 1908.

STERILIZING RUBBER GLOVES.

THE gloves are tested for imperfections by blowing them up with considerable force. If the air escapes even in the smallest amount, the glove is discarded. If the nurse is uncertain whether or not there is a puncture, let her hold the inflated glove under water, when if there is a puncture a tiny stream of air bubbles will escape from it. The gloves are washed thoroughly inside and out and then laid in a box with a good supply of talcum powder. The box is shaken briskly, covering the gloves generously with powder. The gloves are turned outside in and powdered again. The gloves may be placed in any steam sterilizer. Hot air should not be turned into the sterilizer. A piece of cotton is laid inside each glove and it is then wrapped loosely in a towel. They should be sterilized alone in the apparatus, being placed as far from the flame as possible, and the steam should flow forty-five minutes. If a high pressure apparatus is used thirty minutes is sufficient. When taken out, the gloves, inclosed in their sterile towels, should be wrapped in sterile paper or laid in a clean box. Before using them the operator washes off the talcum powder with alcohol or antiseptic solution.—*National Hospital Record.*

THE annual report of the Neu Guinea Compagnie, presented at the meeting at Berlin on March 27, shows that during the last business year the rubber plantations were increased by 381 hectares [=941½ acres], bringing the total up to 1120 hectares. There were planted during the year 88,841 young trees—of which 75,548 were *Ficus elastica*, 2534 *Hevea Brasiliensis*, and some others not specified. The total number of rubber trees now under cultivation is 627,104. The company's principal interest to date, however, has been in cocoanuts, to which they have devoted 6099 hectares, part now yielding.



A GERMAN RUBBER WASHER.
[With Oblique Corrugations. Made by Harburger Eisenwerk Actiengesellschaft, at Harburg a/d Elbe.]

THE RUBBER TRADE AT SAN FRANCISCO.

BY A RESIDENT CORRESPONDENT.

THE condition of the trade has changed very little during the month, and although the merchants would have been pleased to have seen a great increase in business, they must be content with the little improvement which has been shown, and rely on the good indications of better business ahead. Almost all of the rubber houses are experiencing some new activity just now, but most of the manufacturers and jobbers do not now look for the market to get back to normal before next fall. All of the big industries, the mining, lumbering and the lesser industries are being operated in a limited way, owing to the continued difficulty in getting money, and there are more men out of employment than should be the case at this time of the year. This sort of a gingerly way of doing business is not a thing that the local merchants are accustomed to, and even when they are doing a business which could be considered flourishing, under the circumstances, they talk of it as though it were exceedingly quiet. The conditions of crops on the coast is entirely favorable, and the general run of conversation now places the beginning of active times at the commencement of the fall season.

The inactivity of the lumber mills along the northern coast, and the threat of the shipowners to stop running the steam schooners that ply between San Francisco and along the coast is attracting the attention of the rubber merchants of San Francisco. As each mill opens in the mountains it usually puts in an almost entirely new stock of rubber supplies, and the rubber houses here look forward to that trade as a very lucrative one. Whether it is a desire on the part of the lumber men to break the strength of the labor unions, or whether it is merely because money is hard to get to carry on big business undertakings, the fact remains that the mills are not starting up as the rubber houses would like to see them do. The market in lumber is probably in a poorer shape now than for a long time past in San Francisco, although as soon as money gets to moving more freely and the demand increases the market will begin to rise rapidly. Of about 135 steam schooners which come and go here, each carries some 400 feet of hose, and for each trip that they make to San Francisco the local rubber merchants figure on selling them on an average of 50 feet. If the schooners should be called out of service the loss to the rubber business will be considerable.

Moore & Sheehan, who are among the most extensive local dealers in druggists' sundries, and agents for the Davol Rubber Co., report that the demand for sundries has shown a marked increase. E. A. Heinze, with the firm, has just returned from a trip through the Napa and Sonoma valleys, and states that from his observation the business situation is very favorable.

The Goodyear Rubber Co. are at last installed in their new quarters in the new ten-story steel building at Nos. 587-591 Market street, corner of Second. The entrance and portion for samples and offices is the Market street entrance, and the firm also occupies the large store furnished by the building next to the Balboa building, on Second. The Market street store is provided with a balcony which affords additional space, and the fixtures which are now being completed are of the finest.

The merchants who handle rubber in this city have set a good pace to other merchants in the matter of speedily providing themselves with modern stores. Only two years have elapsed since their old locations were all destroyed, and now every one of the prominent rubber establishments is located in quarters which are far ahead of anything which they occupied previous to the big conflagration.

The Diamond Rubber Co. are now well settled in a fine new location at the corner of Second and Mission streets. The offices are subdivided in the front of the store and the fixtures, finished in golden oak, are unusually attractive.

Richardson & Erlin Co., at No. 580 Mission street, representatives of the Davidson Rubber Co., are enjoying an increase in the business of druggists' sundries this month over that of May.

Mr. Norton, president of the Pacific Coast Rubber Co., has recently returned from Portland, Tacoma, and Seattle, and states that he noticed a marked improvement in conditions throughout the northwest. In San Francisco he states that business has picked up quite a bit during the past few weeks, and that although it is not as good as they would like to see it, it is much better than it has been since the first of the year.

The Consolidated Rubber Tire Co., who sell the Kelly-Springfield tires, are now located at No. 567 Howard street.

Mr. Parish, of the Gorham Rubber Co., states that trade conditions still remain quiet, and that the rubber houses are mostly waiting for fall before they expect money to loosen to any great extent. Then the jobbers can get what they want and trade will improve right down the line. A considerable improvement in business is reported from the firm's Seattle branch.

The temporary quarters of the Sterling Rubber Co. have been abandoned for the company's new and permanent building, and they are now actively taking care of the business at the new store.

PACIFIC RUBBER CO.'S "BATTLESHIP."

During the recent visit to the Pacific coast of the American battle fleet part of the scheme of decoration which was universal in the coast cities was the ornamenting of the windows of stores with designs suggested by the occasion. In very many San Francisco store windows the decorations took the shape of battleship displays. For instance, the Pacific Coast Rubber Co., at No. 416 Mission street, displayed a battleship entirely of rubber and kindred articles, which probably was unique. This ship they named the *Ribano*, and it was built as nearly upon the lines of the *California* as possible. A view of this display, reproduced from a photograph, is shown here. The *Ribano* was composed of the following articles:

Hull—Imperial stitched rubber belting; guns—hose mats—underwriters' hose pipes; Tunnels—double jacket fire hose; turrets—Hoyt's belt cement; deck—asbestos gaskets; ventilators—elbows and couplings with reducers; mortars—reducers and spool of wire lace; fighting tops—leather belting; bridge—packing; anchor—washer cutters; port holes—jar rings; boom—Tabor spanner; search light—bucket; wireless telegraph—gage glasses and wire lace; life boats—tennis shoes; launches—rubber shoes; rigging—wire lace and belt plates.

This boat was designed by two ingenious young men in the store, and was much admired by the public. The name given to the boat—*Ribano*—was made up from the names of Messrs. Richter, Basse, and Norton, of the Pacific Rubber Co.

The W. D. Newerf Co., Los Angeles and San Francisco, Pacific coast agents for The Goodyear Tire and Rubber Co.'s tires, donated a beautiful cup as a prize for the winner of the 50-mile Derby at the race meet of the Los Angeles Automobile Dealers' Association, on Decoration day.

The report from the Gutta Percha and Rubber Manufacturing Co., at No. 69 First street, shows that this is the best month the firm have had so far this year, and that trade conditions are showing steady improvement.

Buckingham & Hecht, extensive wholesalers of rubber boots and shoes, have just moved to their new permanent building at the corner of Second and Mission streets, where they now occupy large quarters.

Mr. W. J. Gorham, of the Gorham Rubber Co., has just returned from an automobile trip to Los Angeles, combining business with pleasure. He found the branch store in Los Angeles doing a satisfactory business considering the general depression, and believes that the outlook is bright for southern part of California.

THE RUBBER TRADE AT AKRON.

BY A RESIDENT CORRESPONDENT.

THE rubber manufacturers of Akron say they are making more automobile tires than ever at the present time. The rush of orders mentioned in recent issues of THE INDIA RUBBER WORLD is keeping up steadily. The slack season, during which the orders for the present year will be falling off and the work for next year has not begun, is expected in August and September. On account of the fact that the Chicago and New York automobile shows have been set from one to three months ahead of the time they were held last year, some have feared that the 1909 tire business will be greatly delayed, but a manufacturer here said that he had no apprehensions on that score. Last year the shows were held early as an experiment, but it was found that the orders for cars came as late as ever. While the manufacturing at this time is mostly to fill consumers' orders, the work in the fall will be for the automobile manufacturers who are beginning to place orders for their 1909 output.

* * *

MOST of the automobile tire manufacturers in the United States attended a meeting at Cleveland, Ohio, on May 21, to consider matters of common interest with regard to trade conditions. A committee was appointed to report at a future meeting, which is expected to be held on July 25. Prices of tires have been irregular of late and there are complaints in some quarters of price cutting. Another factor in the situation has been the club proposition, which the tire and accessory makers desire to have regulated before its further spreading. The practice of club members securing inside prices is seriously cutting into the business of the accessory dealers and is generally considered detrimental to the trade, which fears that it may even extend to the buying of cars.

At the same time a meeting of the Clincher Rim Association was held in Cleveland, attended by representatives of companies making and using the principal rims on the market—the Goodrich, the Diamond, the Goodyear, and the Midgley—with the object of devising a plan for standardizing rims. It is stated that progress was made toward realizing this end and other meetings will be called.

* * *

S. S. MILLER, superintendent of the Buckeye Rubber Co., states that the addition to the factory of that company will be in operation in two months. The new building will be used entirely for the manufacture of pneumatic automobile tires. Since the establishment of the factory seven years ago, it has been devoted to the manufacture of the Kelly-Springfield solid carriage tire. During the last year the company have been placing pneumatic tires on the market, with such success as to lead the construction of the new building for their manufacture on a larger scale. The structure is three stories high, 40 x 231 feet. A new 700 HP. engine, two new boilers, two calenders, two washers, five mills, and a combination press and vulcanizer for automobile tires will be installed. Mr. Miller said that the business of the company in solid tires during the last three months has been the largest it has ever seen.

* * *

As a tribute to the state of Ohio for the privilege of doing business within its borders, the secretary of state received from The B. F. Goodrich Co. alone an annual fee of $10,000. The fee was paid May 25, under the act of the legislature known as the Willis law. Each year every corporation in the state is required to send to the secretary of state a certificate of its condition and to pay a fee equal to one-tenth of 1 per cent. of the capital stock of the company, which in the case of the Goodrich company is $10,000,000 and of the Diamond Rubber Co., $5,000,000. Failure to pay this fee subjects a corporation to the forfeiture of its charter and delay in payment subjects the corporation to a penalty of $500, and $100 additional for each day of delay.

* * *

THE Goodyear Tire and Rubber Co. are putting on the market an important automobile accessory in the form of the Goodyear Air Bottle. It is a tank fitted with valve, pressure gage, safety blow off, and valve lifter, filled with sufficient compressed air to inflate eight 3-inch tires to 60 pounds pressure or equivalent. A small hose attached to the bottle is fastened to the opening of the tire valve and the valve on the bottle opened. The pressure gage indicates when the tire is full enough. The bottle enables automobile drivers to save time while en route, in case it is necessary to inflate a tire.

* * *

THE Goodyear Tire and Rubber Co. recently closed a contract with the New York Taxicab Co. to equip the cabs of that company with tires. Instead of selling the tires to the company, the Goodyear people contract to furnish tires by the mile. The tires remain the property of the manufacturers, who are paid so much for each mile each tire travels. Three hundred cabs were equipped for the New York Taxicab Co. and 50 cabs for the New York Transportation Co., the latter contract amounting to about 3,300,000 miles. They are the Goodyear Detachable tires on Goodyear Universal rims. The contract also includes the Goodyear air bottle for inflating tires.

* * *

ORDERS for a new patent tire protector are being filled by the O'Neil Tire and Protector Co., of Akron. The appliance is called the O'Neil Internal Tire Protector. It is made of duck covered with fabric, chemically treated, placed between the tire case and the inner tube, and referred to as cutting down the number of punctures from 70 to 80 per cent. W. J. O'Neil is president, and W. T. Tobin vice-president, and C. J. Maxon, secretary and sales manager of the company. Mr. Maxson said that considerable success had been met with in equipping Glidden cars with the protectors, about 12 drivers in Cleveland and Buffalo having agreed to use the appliance.

* * * *

A PRIVATE rubber enterprise called the Eagle Rubber Co., operated by Mr. George N. Eby, is making rubber gloves in the old plant of the Summit Rubber Co., in Barbertown. It is the intention of the company to add other lines of dipped goods.

The Akron Automobile Club has been reorganized, with Fred Work as president, A. B. Smith, vice-president, A. Auble, Jr., secretary, and E. H. Roth treasurer. The club will work for the completion of an improved roadway from Akron to Cleveland.

M. S. Johnson, of The B. F. Goodrich Co., and J. R. Bailey and T. J. Smith, of the Diamond Rubber Co., attended the convention of the Master Car Builders' Association in Atlantic City during the week of June 14.

News of the American Rubber Trade.

GENERAL RUBBER CO.—ELECTION.

THE annual election of the General Rubber Co. (New York, June 4) resulted in the choice of the following as directors: Samuel P. Colt, Lester Leland, William F. Bass, John J. Watson, Jr.; Homer E. Sawyer, Walter S. Ballou, James Deshler, Anthony N. Brady, and Charles H. Dale. Messrs. Bass and Sawyer succeed E. C. Benedict and James B. Ford. The following were elected officers:

President—SAMUEL P. COLT.
Vice President—LESTER LELAND.
Second Vice President (a new office)—WILLIAM F. BASS.
Treasurer—JOHN J. WATSON, JR.
Secretary—SAMUEL NORRIS.
Assistant Treasurer—W. H. BLACKWELL.
Assistant Secretary—JOHN D. CARBERRY.

The executive committee consists of the president (*ex-officio*) and Messrs. Dale, Leland, Bass, Watson, and Sawyer. The General Rubber Co. are the purchasing agency of crude rubber for the United States Rubber Co. and the Rubber Goods Manufacturing Co.

ESSEX RUBBER CO. ACQUIRE A FACTORY.

THE Essex Rubber Co. (Trenton, New Jersey) have acquired the plant at May and Beak streets, equipped for factory purposes in 1903 by the late Dyson Rubber Co. The Essex company for some time past have manufactured rubber specialties for the shoe trade, in leased premises, at Bloomfield, N. J., which have now been given up. The new plant acquired will be enlarged to permit of adding the manufacture of rubber mats and tiling. Mr. Oakley has had a long experience in the rubber industry, including several years spent in connection with the Grieb Rubber Co., who made a line of shoe specialties, such as Mr. Oakley is now marketing. Mr. Oakley is president of the Essex Rubber Co.; W. F. Bainbridge is vice-president and New England sales manager, and L. M. Oakley secretary.

HASKELL GOLF BALL CO. VERSUS FIELD.

THE case of the Haskell Golf Ball Co. *vs.* Marshall Field Co., No. 28,363 in chancery, for alleged infringement of patent, is still pending in the United States circuit court in Chicago. The bill of complaint was filed August 10, 1896, and the complainant was ruled to close its *prima facia* proofs by February 1 last. The defendant has not yet completed its proofs, however, and the case cannot now come on for hearing before autumn. In behalf of the Field company Samuel D. Castle, of Des Moines, Iowa, deposed that he is the original inventor and patentee of the modern method of making golf balls. Castle produced papers taken out in 1880, covering a rubber centered gutta-percha golf ball.

CHANGE OF NAME.

THE name Atlantic Rubber Co. has been adopted for the business at Clarendon Hills, Massachusetts, carried on hitherto as the New England Rubber Manufacturing Co. The business is the manufacture of waterproof clothing.

RUBBER SHOES FOR THE INDIANS.

CONTRACTS for supplying rubber footwear for the Indians, at the expense of the government, for the fiscal year beginning July 1, next, have been awarded to J. Edmund Strong, of Chicago, who for several years past has secured most of this business, and to Siegel Cooper Co. (New York), who get a considerable share of it this year. Details as to the goods called for appeared in THE INDIA RUBBER WORLD of May 1, 1908 (page 271).

HABIRSHAW WIRE CO.'S ANNUAL.

AT the annual meeting of the Harbirshaw Wire Co. (New York, April 15), the following officers were chosen: Herbert L. Satterlee, president, reëlected; Richard Irwin (formerly vice president and treasurer), first vice president; R. S. Satterlee (formerly secretary), second vice president; Fred J. Hall, treasurer; James B. Olson, general sales manager, was also elected secretary. Dr. William M. Habirshaw was re-elected chairman of the board of trustess.

DIXON CRUCIBLE CO.'S ELECTION.

THE annual meeting of the stockholders of the Joseph Dixon Crucible Co. (Jersey City, New Jersey), was held on April 20. Edward F. C. Young, George T. Smith, George E. Long, Harry Dailey, William Murray, Edward L. Long and William H. Corbin were elected members of the board of directors. The officers—Edward F. C. Young, president; George T. Smith, vice president; George E. Long, treasurer; and Harry Dailey, secretary—were unanimously reëlected.

WOONSOCKET RUBBER CO.'S AFFAIRS.

THE report of conditions filed by this company as of March 31, 1908, with the Massachusetts state authorities, with the corresponding figures for two years preceding, is as follows:

ASSETS.

	1906.	1907.	1908.
Real estate	$897,543	$887,218	$887,218
Machinery	292,842	281,745	281,745
Material	2,429,532	2,918,842	1,971,966
Cash and receivables	324,322	152,714	358,860
Adjustment inventory	1,198,994	1,198,994	1,198,994
Loans receivable	1,800,000	1,800,000	2,800,000
Miscellaneous	.....	1,178	1,263
Total	$6,943,233	$7,240,691	$7,500,045

LIABILITIES.

Capital stock	$3,000,000	$3,000,000	$3,000,000
Accounts payable	185	631,927	26,371
Special debt	1,800,000	1,800,000	2,800,000
Surplus fixed	1,613,900	1,613,900	1,613,900
Profit and loss	529,148	194,864	59,775
Total	$6,943,233	$7,240,691	$7,500,046

BOSTON RUBBER SHOE CO.'S AFFAIRS.

THE report of conditions filed by this company as of March 31, 1908, with the Massachusetts state authorities, with the corresponding figures for two years preceding, is as follows:

ASSETS.

	1906.	1907.	1908.
Real estate	$768,525	$768,525.00	$768,525.00
Machinery	375,515	375,515.06	375,515.06
Merchandise	3,540,004	4,394,856.51	2,722,804.26
Cash and receivables	2,041,383	1,932,444.34	2,220,921.88
Patent rights	.....	2,000.00	9,500.00
Special contract U. S. R. Co.	4,800,000	4,800,000.00	4,800,000.00
Miscellaneous	16,620	16,670.00	16,670.00
Total	$11,542,047	$12,290,010.91	$10,913,936.20

LIABILITIES.

Capital stock	$5,000,000	$5,000,000.00	$5,000,000.00
Accounts payable	428,114	706,146.11	.....
Funded debt	4,800,000	4,800,000.00	4,800,000.00
Floating debt	.....	650,000.00	.....
Accrued interest	40,000	40,000.00	40,000.00
Profit and loss	1,273,933	1,093,864.80	1,073,936.20
Total	$11,542,047	$12,290,010.91	$10,913,936.20

LARGE ORDER FOR RUBBER TILING.

WHAT is probably the largest order for rubber tiling ever placed has been received by the New York Belting and Packing Co., Limited, from Andrew Dall & Son, of Cleveland, Ohio. The order is for the company's Interlocking tiling, for the new Cuyahoga county courthouse, at Cleveland. It will be laid in the large court rooms, corridors, judges' chambers, ante rooms,

and so on, in different designs to conform with the color scheme of the various rooms. It is understood the order amounts to about $125,000.

MR. BOURN STUDYING RUBBER.

MR. AUGUSTUS O. BOURN, Jr., since recently completing a post graduate course at Columbia University, has turned his attention to the business of crude rubber brokerage, opening an office for the purpose at No. 11 William street, New York. Mr. Bourn refers to his new work as a study of the proposition "how to land rubber as economically as possible from the trees to the manufacturer's washing room." The reception given by Mr. Bourn at the university on May 26, on the occasion of the conferring of a degree upon him, was attended by a number of prominent persons, including former Governor Bourn, his father, and Mrs. Bourn; Major General and Mrs. Frederick D. Grant, United States Senator and Mrs. Nelson W. Aldrich, United States Senator and Mrs. George Peabody Wetmore, Bishop and Mrs. David H. Greer, Mr. and Mrs. O. H. P. Belmont, Mr. and Mrs. Franklin Farrel, Mrs. Potter Palmer, Mr. Russell Colt, Mr. Edward B. Aldrich, and Mr. and Mrs. John D. Rockefeller, Jr

CANADIAN GENERAL ELECTRIC CO.

A GROWING and prosperous business is that of the Canadian General Electric Co., Limited (Toronto), whose works are at Peterboro, 75 miles from the city of Toronto. The company's products embrace practically everything in the way of electrical appliances and supplies, from incandescent lamp bulbs to the largest generators now in commercial use. The works at Peterboro have been expanded annually until they now embrace departments for the production of everything required in the insulation of an electric lighting or power service. Not the least in importance among these departments is the rubber works required for the insulation of wires. Connected with this company in the Canada Foundry Co., Limited, the works of which, at Davenport, form the iron and steel department of the electric company, it being here that the larger machinery, locomotives, and so on are built.

MR. HOTCHKISS GOES AROUND THE WORLD.

THE most recent American visitor to the rubber planting regions of the Far East was Mr. H. Stuart Hotchkiss, vice president and secretary of L. Candee & Co., the rubber footwear manufacturers at New Haven, Connecticut, who has returned from an eight months' trip around the world, on which he was accompanied by Mrs. Hotchkiss. Mr. Hotchkiss visited the Philippine Islands, French Indo China, the Straits Settlements, the Federated Malay States, Java, and Ceylon, studying the conditions of rubber culture closely, after which he had an opportunity to interview in London a number of persons interested in the subject in various ways, and he comes home convinced that the business of planting rubber is already one of great importance and one which is destined to become much more so.

EASTHAMPTON RUBBER THREAD CO.

AT the annual meeting of this company (Easthampton, Massachusetts, June 16) the following directors were elected: L. S. Stowe, William G. Bassett, Robert S. Williston, Harry E. Converse, and F. W. Pitcher. William G. Bassett was elected president and L. S. Stowe, long time president of the company, was elected treasurer. F. W. Pitcher was reëlected clerk and general manager.

"CAN YOU BEAT THIS?"

AMERICAN TIRE ARMOR CO. (San Francisco) announce that they are "soon to market an automobile tire that will revolutionize the tire business of the world." This will begin when they have sold some of the $5,000,000 in capital shares authorized by their Arizona charter. Their plan is to sell all the automobile tires required in the United States at an average price of $50, and an average profit of $12.50 per tire, all of which works out, according to the company's figures, at an annual dividend of 50 per cent. on the entire capital. As the automobile production grows, the yearly dividend is expected to go up to 75 per cent. The San Francisco public has been allowed to see the new tire and demonstrations of it in the principal Eastern cities are promised early this month. By the way, the prospectus fails to mention what the company's procedure might be in case any other tire makers should refuse to allow the American Tire Armor Co. to absorb all the trade.

AMERICAN RUBBER CO.'S AFFAIRS.

THE report of condition filed as of March 31, 1908, with the Massachusetts state authorities, embraces the following details:

ASSETS.

Real estate	$188,008.22
Machinery	136,927.22
Merchandise	1,392,028.97
Cash and receivables	1,189,028.12
Special bills receivable	800,000.00
Total	$3,705,992.53

LIABILITIES.

Capital	$1,000,000.00
Accounts payable	4,657.39
Special bills payable	800,000.00
Floating debt	300,000.00
Surplus, fixed	865,734.01
Profit and loss	735,601.13
Total	$3,705,992.53

L. CANDEE & CO.'S ANNUAL.

AT the annual meeting of shareholders of L. Candee & Co. (New Haven, Connecticut, May 16.) Henry L. Hotchkiss, Samuel P. Colt, James B. Ford, Lester Leland and H. Stuart Hotchkiss were elected directors. On June 18, at a meeting of the directors, Henry L. Hotchkiss was elected president for the thirty-sixth consecutive year; H. Stuart Hotchkiss was reëlected vice president and secretary, and W. H. Gilbert was elected treasurer to succeed George E. Bailey.

TRADE NEWS NOTES.

THE Electric Cable Co. (New York), whose plant at Bridgeport, Connecticut, was burned in February last, have nearly completed new works. The new plant is based upon different plans from the old, and the machinery is of more modern design.

The Merchants' Association of New York as usual have secured from the railroads special rates for merchants desiring to visit the city as buyers. These concessions apply to different sections of the country at different dates; for instance, the reduced rates from towns in the Central Passenger Association territory will be in effect for 30 days from July 25. Any person desiring more definite information is invited to write to the association for a circular.

An important rubber manufacturing company got a verdict for 75 cents in a Milwaukee court against a customer in a dispute over payment for fountain pens. The defense had to puy $4.14 cents costs, also.

Tire-Life Co. (New York) send THE INDIA RUBBER WORLD a section of a motor tire inner tube filled with their compound which is stated to have gone 6,500 miles.

Mr. J. M. Murdock with 6 companions traveled in an automobile from Los Angeles to New York city with no other tire trouble than one puncture, though much of the course was through a rough and sparsely settled country with poor roads. He used "Continental" tires and averaged 136.36 miles per day, over 3,692.8 miles.

The Eton Talc Mining Co. was incorporated June 17 under the New Jersey laws by J. B. Thompson, D. W. Myers, and J. C. Myers, of Atlantic City, N. J., with $16,000 capital, to mine talc, barytes, and other minerals.

The Diamond Rubber Co. (Akron, Ohio) were mentioned in the last INDIA RUBBER WORLD as having contracted to supply 14,620 pounds of solid rubber tire stock for the New York fire department, to which was added an order for 12,000 pounds on June 10.

A TIRE FILLER IN LITIGATION.

IN the superior court at Boston Charles P. Cummings obtained a temporary injunction to restrain William S. Daniels from selling or revealing a secret process for a substitute for rubber, said to be especially valuable as a tire filler. The process is described as the invention of Dr. Joseph P. Bodge, of Portland, Maine, with whom Cummings has contracted for an interest. The party here enjoined evidently is the W. Smalley Daniels lately appointed manager of the Elastic Tire Filling Co., No. 52 Church street, Boston.

UNITED STATES RUBBER CO.'S SHARES.

TRANSACTIONS on the New York Stock Exchange for four weeks ending June 20:

COMMON STOCK.

Week May 29	Sales 2,530 shares	High 25⅝	Low 24⅛
Week June 6	Sales 2,960 shares	High 26	Low 25
Week June 13	Sales 2,045 shares	High 26	Low 25½
Week June 20	Sales 625 shares	High 25½	Low 25½

For the year—High, 26¾, May 18; Low, 17½, Feb. 26.
Last year—High, 52½; Low, 13½.

FIRST PREFERRED STOCK.

Week May 29	Sales 600 shares	High 91½	Low 90¾
Week June 6	Sales 1,445 shares	High 93½	Low 90¼
Week June 13	Sales 1,720 shares	High 94	Low 92½
Week June 20	Sales 760 shares	High 93½	Low 92¾

For the year—High, 95, May 19; Low, 76, Feb. 19.
Last year—High, 109⅞; Low, 61¼.

SECOND PREFERRED STOCK.

Week May 29	Sales 700 shares	High 60¼	Low 58
Week June 6	Sales ... shares	High ..	Low ..
Week June 13	Sales 300 shares	High 60	Low 60
Week June 20	Sales ... shares	High ..	Low ..

For the year—High, 61¼, Jan. 23; Low, 42, Feb. 21.
Last year—High, 78⅛; Low, 39.

TRADE NEWS NOTES.

THE thirty-seventh regular quarterly dividend of 1¾ per cent. on the preferred shares of the Rubber Goods Manufacturing Co. was payable on June 15. The disbursement amounted to $181,149.50.

It has been proved many times that a man who is familiar with the rubber manufacture is particularly well equipped to market supplies. This is why the Rubber Trading Co., of New York, have been fortunate in securing Mr. Frank F. Fox as their Trenton representative, as Mr. Fox was formerly connected with several Trenton factories.

Peerless Cement Co. (Lynn, Massachusetts) are manufacturing, in addition to a full line of rubber cements, waterproof box toe gum and other shoe factory supplies. Henry McDermott is the manager, and the offices are at Nos. 218-220 Broad street, Lynn.

John A. Roebling's Sons Co. (Trenton, New Jersey) applied recently for a permit to erect new buildings, at a cost of $55,000, to replace those destroyed by fire on February 5 last.

The business in crude rubber conducted hitherto by Robinson & Stiles at No. 140 Pearl street, New York, will be continued under the name of Robinson & Co., Mr. W. H. Stiles having retired. The new firm consists of Francis H. Robinson, Francis R. Henderson, and Thomas Desmond.

The Swinehart Clincher Tire and Rubber Co. (Akron, Ohio) have filed with the secretary of state of Illinois the certificate required of foreign corporations to entitle them to do business in that state.

The New Jersey Car Spring and Rubber Co. (Jersey City) announce that their "Tuebor" underwriters' cotton fire hose, which brand is registered in the United States patent office, is approved by the Associated Factory Mutual Fire Insurance Companies and the National Fire Protection Associations.

The Ennis-Ruff Tire Co., now occupying the building No. 22 Commercial street, Newark, New Jersey, are about to add the adjoining factory. Grant Lambright, for many years connected with prominent Akron rubber factories, is the superintendent.

TRADE NEWS NOTES.

THE mills of the Woonsocket Rubber Co. were not closed this year for "circus day," as has been the custom hitherto. The question of closing was put to the employés, who, in view of the recent long shutdown of the factories, preferred to work on that day.

The Republic Rubber Tire and Shoe Co. of New York point out that much damage has been done to motor car tires by the oiling of roads in the parks and boulevard system in some of the larger cities, and also country roads on Long Island. To avoid damage from such cause the company have brought out a detachable anti skid leather cover, which entirely envelopes the rubber tire by hooking in under the rim, and on which there are series of steel studs which prevent the wear of the leather. The idea, of course, is that the oiled thoroughfares will not damage the leather in the tire cover.

The Seamless Rubber Co. (New Haven, Connecticut), owning to the increased business of their Chicago branch, have found it necessary to move into larger quarters and are now located at No. 120 Franklin street.

PERSONAL MENTION.

FOR two weeks in June Mr. Arthur F. Townsend, president of the Manhattan Rubber Manufacturing Co., who is captain of Troop 1, Squadron A, National Guard of New York state, has been in camp near Middletown, N. Y., at the annual muster of both the regular and volunteer troops.

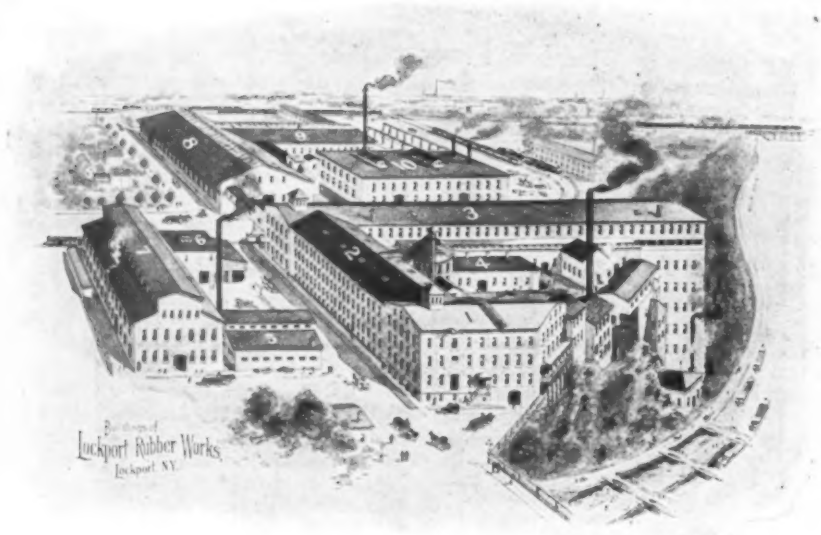
Dr. Erwin Meyer, who for some years has had charge of research work in chemistry for the Rubber Goods Manufacturing Co., at their laboratory at New Brunswick, New Jersey, has resigned that position. It is understood that he has plans, after devoting part of the summer to rest and some writing, for engaging in work as a rubber chemist on his own account.

Major J. Orton Kerbey, some time United States consul at Pará, and connected now with the International Bureau of American Republics, at Washington, sailed from New York on June 22 on the Lloyd Brazileiro steamer *Goyaz* for Pará and other Brazilian ports, intending to reach Rio de Janeiro in time for the Brazilian international exhibition. Afterward he probably will go up the Amazon to the leading rubber districts, including the Acre territory, after which another book from his pen on South America may be forthcoming.

A notable wedding in New Jersey society occurred at New Brunswick on the afternoon of June 3, uniting Miss Margaretta Meyer and Mr. James Kearney Rice, Jr. Miss Meyer is a daughter of Mrs. John Christopher Meyer, whose husband was the oldest son of the one time "rubber king" Christopher Meyer, and who was left in charge of his father's rubber interests. Among the 400 wedding guests were two daughters of the late Christopher Meyer and their husbands—Mr. and Mrs. George Lowther, of Riverside, Connecticut, and Mr. and Mrs. Charles Greer, of Rye, New York. The bride was escorted to the altar by her brother, John Christopher Meyer, and her sister Katherine was maid of honor. Two of the bridesmaids were her cousins, Misses Marguerita and Clara Lowther. Another cousin, Mr. George Greer, was one of the ushers. The bridegroom is connected with the important banking house of Hatch & Co., of New York. The wedding tour is being made in Europe.

Mr. Ira F. Burnham, of Stoughton, Massachusetts, president and general manager of the Stoughton Rubber Co., and Mrs. Gertrude De Laite Paul, of Everett, Mass., were married in the latter city on the evening of May 5.

Mr. E. E. McConnell, after a connection for 11 years with the New York Belting and Packing Co., Limited, as manager of their rubber tiling department, has resigned to accept the position of manager of the rubber tiling department of The Goodyear Tire and Rubber Co. (Akron, Ohio), with headquarters at Sixty-fourth street and Broadway, New York.



VIEW OF THE LOCKPORT RUBBER WORKS.

[The figures on the various buildings indicate: 1—Office and Laboratory. 2—Hose and Tire Departments. 3—Mill Room and Inner Tube Department. 4—Bicycle Tire Department. 5—Machine Shop. 6—Reclaiming Plant. 7, 8, 9—Leased to a textile concern.]

THE RUBBER FACTORY AT LOCKPORT.

AN illustration on this page gives a view of the plant of the Lockport Rubber Works, the establishment of which, at Lockport, New York, has been reported lately in this journal. The company, by the way, have been active during the month in completing the organization of their various departments. It is announced that they will open shortly a New York branch, in charge of Mr. D. B. Nally, who has been widely and well known in the tire trade, from the time when this was confined principally to cycle tires.

TRADE NEWS NOTES.

AN addition has been made to the offices of the Diamond Rubber Co., affording 5,000 square feet of space. The room will be used for factory office departments.

It is expected that the Diamond Rubber Co. employés will have 10,000 people at their annual outing at Myers Lake, Canton, Ohio, this year. The date of the picnic is July 25. Last year the attendance was 8,000 and in the year before 5,000. Picnics of other companies have increased proportionately in attendance, indicating the rapid growth in the number of men employed here in the rubber trade.

Dr. Mary S. Whetstone, a special agent of the bureau of labor of the United States department of commerce and labor, was recently visiting rubber factories in New England to determine the effects of work therein on the health, especially of women and children. She also consulted local physicians relative to conditions of health among rubber workers.

Mr. Eben H. Paine, who has been in Europe since last July in the interest of the United States Rubber Co., returned to the States early in the month and will spend the summer months on this side of the Atlantic. Mr. Paine maintains offices in London, but has traveled extensively on the continent in connection with his company's business.

Frederick T. Ryder, of the Apsley Rubber Co. (Hudson, Massachusetts), has returned from an extensive and successful business trip to the West.

The increase in volume of shipments from Fairfield, Connecticut, is referred to as indicating a marked improvement in business in that locality. The Fairfield Rubber Co. are mentioned as sharing in this improvement.

TRADE NEWS NOTES.

THE Frank Mossberg Co. (Attleboro, Massachusetts) have issued a special catalogue covering metal reels, spools, and beams. This catalogue not only covers reels and spools for the entire wire manufacture; but also for the textile industry. Copies will be sent to any one interested, upon request.

The shareholders of the Apsley Rubber Co. (Hudson, Massachusetts) have voted to increase the capital stock from $450,000 to $750,000, leaving the undivided profits at $270,000 in addition.

The tire output of the factories of the Rubber Goods Manufacturing Co. for this year is reported larger than last, and their railway supplies business is referred to in a newspaper article as aggregating $3,000,000 to $4,000,000 a year.

John H. Pierce, superintendent of L. Candee & Co., rubber manufacturers at New Haven, Connecticut, is mentioned as one of the incorporators of Parkham Realty Co., formed to improve real estate at Sheepshead Bay, Brooklyn, New York.

The regular quarterly dividend of the common stock of the Canadian General Electric Co., Limited, at the rate of 7 per cent. per annum, is payable on July 1.

The Boston Die Co. have completed and now occupy a new shop at East Cambridge, Massachusetts. It is equipped with the latest improved machinery and facilities for prompt shipments.

The management of the Chicago Reclaiming Co. have put in plant for the manufacture of mold work and a line of mechanical goods, and have begun manufacturing. This branch of their business is to be conducted under another firm style—Monarch Rubber Works. The location is Forty-sixth avenue and Twelfth street.

Mr. Horace DeLisser, president of the Ajax-Grieb Rubber Co. (Trenton, New Jersey), left early in the month for a business trip in the West, to extend as far as the Pacific coast.

The Durham Rubber Manufacturing Co., Limited (Bowmanville, Ontario), have received an order for a belt which will be 588 feet long and 42 inches wide, and weigh over two tons.

Mr. H. T. Reynolds, until lately connected with The Ohio Rubber Co., at Cincinnati, has accepted a position to represent The Diamond Rubber Co. in Southern territory, in both mechanical and tire lines, with headquarters in Cincinnati.

The Innerseal puncture remedy, for cycle and motor tires, is referred to as a silver flake, and not a liquid that oozes through the punctures, besmearing the tire with a sticky molasses-like substance. It is said not to prevent vulcanizing, and "mends while you ride." It is patented, and made by the Innerseal Manufacturing Co. (Cleveland, Ohio).

Mr. James H. Stearns, of the rubber manufacturing firm of Parker, Stearns & Co. (New York) owns the beautiful Pine Grove Springs Hotel, at Spofford, New Hampshire. It is a fine testimonial to the beauties of the lake and mountain scenery there, as well as to the comforts of the great summer hotel named, that by the first of June, when the house opens, the same families and visitors every year begin to hasten to this delightful resort.

Mr. W. G. Brown has resigned his connection with the Cincinnati Rubber Manufacturing Co., of which he has been vice-president and general manager since the organization of the business, in April, 1905. The resignation dates from June 1.

MR. WILLIAM F. BASS.

THE news that Mr. William F. Bass, general manager of the General Rubber Co. (New York), has been reëlected to that office and also made second vice-president will be taken by the trade as an appreciation of very excellent work in that company, with which for some five years past he has been connected. Mr. Bass is by training and experience a thoroughly expert crude rubber man. Beginning with the house of W. R. Grace & Co., he handled all of their Pará business right on the docks, thus laying a foundation for a very important part of crude rubber knowledge. Later he connected himself for a time with A. T. Morse & Co., and when the Crude Rubber Co. was formed was

WILLIAM F. BASS.

selected by Mr. Charles R. Flint as one of his right hand men. In the liquidation of that company, Mr. Bass handled all of the accounts with the banks to whom rubber had been pledged. As this meant some 25 or 30 national banks and some 10 or a dozen sterling banks the work was exceedingly difficult, but Mr. Bass handled it with exceptional brilliancy. When that work was finally finished he was secured by the General Rubber Co. as assistant general manager, and was later appointed general manager, and to that office now adds that of second vice-president. Mr. Bass was born in Petersburg, Virginia, and is about 40 years old. He is not only an enthusiastic tennis player, but is manager of the Crescent-La Crosse Club of Brooklyn, which is notable as being the champion team of the United States and Canada.

NEW ENGLAND RUBBER CLUB.

A MEETING of the executive committee of the New England Rubber Club was held on June 23 at the office of President Arthur W. Stedman, in Boston, to perfect arrangements for the mid summer outing.

The mid-summer outing will occur on Wednesday, July 15. In the forenoon of that day those who desire can make entries for golf at the Country Club, Brookline; prizes will be awarded for the best scores. At 1 P. M. the members and their guests will start on a special steamer trip down the harbor and if the weather permits landing will be made at Paddock's Island, Fort Andrews, where the Club will be the guest of United States army officers until 5:30. Weather permitting, a ball game will be played on the island between the Importers and Manufacturers. It is planned to invite the army officers to accompany the Club on the steamer for Point Shirley, where a fish dinner will be served about 6:30 P. M. After a social evening at Point Shirley the steamer will be taken to Boston, arriving about 10 P. M.

At the same meeting it was voted that the president of the Club write to Governor Guild, of Massachusetts, suggesting that he use his influence toward having the governors of all the New England states meet to confer on such matters of common interest to New England as forestry, agriculture, and improvement of transportation. It is understood that a movement is on foot in all the business clubs in New England in behalf of such a conference.

Mr. Henry C. Pearson, vice president, has been appointed a delegate to represent the Club at the International Rubber and Allied Trades Exhibition to be held in London in September.

At a meeting of the executive committee of the New England Rubber Club, held on Tuesday, June 2, the following committees were appointed:

Dinner.—Francis H. Appleton, chairman; John Patterson, W. E. Barker, E. H. Clapp, T. J. Skinner.

Sports.—W. E. Farrington, chairman; Henry G. Tyer, F. D. Balderston, F. C. Hood, R. L. Chipman.

Entertainment.—George H. Mayo, chairman; Roy L. Dorr, C. J. Bailey, James H. Learned, William H. Palmer.

Resolutions.—George P. Whitmore, chairman; E. E. Wadbrook, A. M. Paul.

Auditing.—J. Frank Dunbar, chairman; George P. Eustis.

NEW INCORPORATIONS.

THE Courtney Rubber Co., June 15, 1908, under the laws of New York state; capital, $100,000. Incorporators: W. J. Courtney and T. M. Johnson, No. 15 Wall street, and John G. Phiel, No. 52 Broadway, New York. The company will manufacture automobile tires and tubes; also mechanical rubber goods, more particularly for railway use. The plant of the new company, at Plainfield, New Jersey, is the first rubber works in that town. Mr. Courtney has been connected for a number of years with one of the leading mechanical rubber goods companies. The office, for the present, is at No. 15 Wall street.

Peerless Leather Tire Co., May 2, 1908, under the laws of California; capital, $20,000. Incorporators: S. Folmer Swain, Cecil H. Stone, H. R. Newbauer, Marcus Weinberger, and Edward W. Gunther, all of San Francisco.

Malaysian Rubber Co., June 18, 1908, under the New Jersey state laws; capital authorized, $3,000,000. Incorporators: William Mason Smith, Armin W. Riley, and Clarence E. Sterreth, all of No. 15 Exchange place, Jersey City, N. J.

PERSONAL MENTION.

MR. FREDERICK NATHAN HAMERSTROM, general manager of The Trenton Rubber Manufacturing Co., and Miss Helen Harper Davis, daughter of Mr. and Mrs. Frederick A. Davis, of Germantown, Pennsylvania, were married at the home of the bride on June 16. After September 1, Mr. and Mrs. Hamerstrom will be at home at No. 850 Carteret avenue, Trenton.

The marriage is reported of Mr. Richard Croker, Jr., of New York, and Miss Mary Brophy, of Providence, Rhode Island. Mr. Croker, at the organization of the International Automobile and Vehicle Tire Co., was elected vice president and manager. Later he joined a banking firm in New York, and he is now secretary of the Roebling Construction Co., a subsidiary concern of John A. Roebling's Sons & Co. The bride is referred to as a niece of the late Joseph Banigan, the rubber manufacturer, and heiress to a portion of his estate.

Mr. George S. Andrus, manager of the Apsley Rubber Co. (Hudson, Massachusetts), stopped work long enough in the middle of June to go to the Clinton Hospital, at Clinton, Mass., and get rid of a somewhat troublesome appendix. The operation was in every way successful and he made a very rapid recovery.

Mr. H. O. Canfield (Bridgeport, Connecticut), of the rubber company that bears his name, has been quite ill of ptomaine poisoning, but his many friends will be glad to know he is up and out and fully recovered.

Review of the Crude Rubber Market.

AFTER a month of fluctuations and, during part of the time, of dullness, prices of crude rubber to-day show, on the whole, something of an advance over the quotations printed in our last issue. A number of items are not changed, and a few are lower, according to the supplies of the different grades in the market. Islands fine new shows a decline, while Upriver fine new is higher, due to the relative volume of arrivals. Toward the end of the month an improved demand for rubber developed, indicating either that manufacturers' stocks are becoming depleted or that a larger volume of business in the industry is in sight.

Arrivals of rubber (including caucho at Pará) continue on a liberal scale—larger, in fact, than in any former period, except for the crop season ended June 30, 1907, for which the figures were unprecedentedly large. In the table below will be seen the extent of the arrivals at Parà for the past ten crop years, except that the figures for June, 1908, are not quite complete:

	Tons.		Tons.
1898-99	25,370	1903-04	30,580
1899-1900	26,670	1904-05	33,060
1900-01	27,610	1905-06	34,490
1901-02	30,000	1906-07	38,005
1902-03	29,850	1907-08	a36,670

[a—To June 29, 1908.]

Almost without exception each season has shown a larger crop than in the preceding year, regardless of price conditions. It may be suggested here that, whereas the lower prices for rubber ruling for some months past may ultimately have the effect of decreasing the output of rubber from the Amazon region, such effect has not yet been visible, for the reason that most of the rubber exported during the past twelve months has been credited against advances of goods or funds made before the decline. The last year has shown a smaller output than 1906-07, it is true, but such variations are not unusual; besides, the figure for the former year was abnormal. It may be added that at Manàos the arrivals this year have been larger than in any other, the figures standing:

	Tons.
Eleven months ending May 31, 1906	22,475
Eleven months ending May 31, 1907	25,934
Eleven months ending May 31, 1908	26,067

The smaller total receipts at Parà have been due to a falling off at other points than at Manàos, the details of, or the reasons for, which are not yet to hand.

At the monthly inscription sale at Antwerp, on June 25, the offerings were exceptionally large, aggregating 676 tons, mostly of Congo sorts, and of which more than 500 tons found buyers. The sale went off at an advance over the prices realized at the May inscription, and these, it will be remembered, showed a substantial gain over the brokers' estimations. At the June sale, it is reported, priced showed an advance of about 30 centimes per kilogram [=2 2/3 cents per pound]. Further Antwerp rubber statistics appear on page 354 of this paper.

Following are the quotations of New York for Parà grades one year ago, one month ago, and June 30, the current date:

PARA.	July 1, '07.	June 1, '08.	June 30.
Islands, fine, new	104 @105	89@90	87@88
Islands, fine, old	none here	none here	none here
Upriver, fine, new	110 @111	92@93	93@94
Upriver, fine, old	112 @113	94@95	95@96
Islands, coarse, new	61 @ 62	46@47	44@45
Islands, coarse, old	none here	none here	none here
Upriver, coarse, new	87@ 88	64@65	64@65
Upriver, coarse, old	none here	none here	none here
Caucho (Peruvian), sheet	70 @ 71	49@50	50@51
Caucho (Peruvian), ball	82 @ 83	61@62	62@63
Ceylon (plantation), fine sheet	127 @128	102@103	103@104

AFRICAN.

Sierra Leone, 1st quality.76@77	Lopori ball, prime.....80@81
Massai, red.....76@77	Lopori strip, prime.....62@63
Benguella .....48@49	Madagascar, pinky.....68@69
Accra flake.....15@16	Ikelemba .....none here
Cameroon ball.....47@48	Soudan niggers.....54@55

CENTRALS.

Esmeralda, sausage.....62@63	Mexican, scrap.....61@62
Guayaquil, strip.....46@47	Mexican, slap.....44@45
Nicaragua, scrap.....59@60	Mangabeira, sheet.....46@47
Panama .....44@45	Guayule .....26@27

EAST INDIAN.

Assam .....78@79	Borneo .....26@27

Late Parà cables quote:

Per Kilo.	Per Kilo.
Islands, fine.....4$100	Upriver, fine.....4$900
Islands, coarse.....1$725	Upriver, coarse.....3$150
	Exchange .....15 7/32d.

Latest Manàos advices:

Upriver, fine.....5$250	Exchange .....15 5/32d.
Upriver, coarse.....3$250	

Statistics of Para Rubber (Excluding Caucho).

NEW YORK.

	Fine and Medium.	Coarse.	Total 1908.	Total 1907.	Total 1906.
Stocks, April 30.....*tons*	280	77 = 375	277	386	
Arrivals, May	1031	475 = 1506	1175	1194	
Aggregating	1311	552 = 1863	1452	1580	
Deliveries, May	1002	491 = 1493	1083	1293	
Stocks, May 31	309	61 = 370	369	287	

	PARA.			ENGLAND.		
	1908.	1907.	1906.	1908.	1907.	1906.
Stocks, April 30.....*tons*	1040	510	267	2005	950	1280
Arrivals, May	1955	1765	1420	700	910	555
Aggregating	2995	2275	1687	2705	1860	1835
Deliveries, May	2360	1670	1597	1110	800	775
Stocks, May 31	635	605	90	1595	1060	1060

	1908.	1907.	1906.
World's visible supply, May 31.....*tons*	3,469	3,091	2,078
Pará receipts, July 1 to May 31	28,420	30,460	27,584
Pará receipts of Caucho, same dates	6,370	5,960	5,245
Afloat from Pará to United States, April 30	750	498	740
Afloat from Pará to Europe, May 31	424	835	451

Plantation Rubber in London.

JUNE 12.—Lewis & Peat report: "About 1,219 packages, weighing about 64 tons, the largest weight yet catalogued, were offered at auction to-day, the greater proportion of which sold at and after the sale." Gow, Gow, Wilson & Staunton, Limited, report: "There was a fairly good demand. The finer qualities especially attracting attention and being well competed for. Some very fine pole Warriapolla estate biscuits realized the highest price of the day—4*s.* 6*d.* [=$——] per pound. Rangbodde 'Cerà' biscuits came next at 4*s.* 5*d.*, while the two finest lots of crepe in the sale, from Ellakande and Nikakotua estates, sold at 4*s*, 2½*d.*" Fine plantation sold one year ago up to 5*s.* 8*d.* [=$——]. Hard, fine Parà to-day, 3*s.* 9*d.*; last year, same date, 4*s.* 7*d.*

Liverpool.

EDMUND SCHLUTER & Co. report [May 31]:

The advance in prices has been more rapid than was anticipated, owing to an earlier demand from America than was expected, and although this demand seems satisfied for the time being, the possibility of further purchases together with the confirmation of the lateness of the new crop keeps the market steady.

RUBBER FLUX

No. 17. Particularly adapted to softening material for tubing machine. Almost universally used for waterproofing wire.

No. 48. For fluxing pigments in compounding. A valuable adjunct to the manufacture of moulded goods as it **does not blow under cure.**

WRITE FOR PRICES.

Massachusetts Chemical Co.

WALPOLE, MASS.

Operates Walpole Rubber Works; Walpole Varnish Works.

THE WORLD'S VISIBLE SUPPLY OF PARA, MAY 31.

	1908.	1907.	1906.	1905.	1904.	1903.
Tons	6478	4452	3363	2908	2036	3656
Prices, hard fine	3/9½	4/7½	5/3¼	5/8½	4/10	3/10¼

LIVERPOOL STOCKS OF AFRICAN RUBBER, MAY 31.

1908.....435	1905.....390	1902.....599
1907.....330	1904.....567	1901.....852
1906.....367	1903.....330	1900.....834

WILLIAM WRIGHT & Co. report [June 1]:

Fine Pará.—Under the influence of American orders, the market has been active on spot and for delivery, and a large business done at advancing prices; closing value, upriver 3*s.* 10*d.*, an advance of 4*d.* per pound during the month. European manufacturers are, however, not buying freely, anticipating a setback in prices later on. The fact, however, of America buying here has undoubtedly stiffened holders' views, as it proves that the surplus stock is held in Europe, and that America will have to supply her requirements to a large extent from this country. Should the American demand continue, it may force European manufacturers to enter the market, which would still further advance prices.

IMPORTS FROM PARA AT NEW YORK.

[*The Figures Indicate Weights in Pounds.*]

MAY 25.—By the steamer *Basil*, from Manàos and Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.
New York Commercial Co.	235,500	62,900	90,300	129,700=	518,400
A. T. Morse & Co.....	146,400	12,200	85,000	47,600=	291,200
General Rubber Co.....	114,900	34,000	90,500	3,700=	243,100
Poel & Arnold.....	107,500	19,600	7,300	19,500=	153,900
Hagemeyer & Brunn....	22,100	4,100	16,000	800=	43,000
Edmund Reeks & Co....	.....	.....	16,500	26,900=	43,400
Wm. E. Peck & Co....	1,800	.....	36,200	.....=	38,000
F. Rosenstein & Co.....	9,500	.....	.....	.....=	9,500
TOTAL	637,700	132,800	341,800	228,200=	1,340,500

JUNE 3.—By the steamer *Obidense*, from Manàos and Pará:

A. T. Morse & Co.....	240,200	56,400	69,100	159,600=	525,300
New York Commercial Co.	90,500	28,100	48,200	39,600=	206,400
Poel & Arnold.....	80,200	2,200	49,500	545,000=	186,400
C. P. dos Santos.....	37,500	4,900	34,400	900=	77,700
Wm. E. Peck & Co.....	35,700	.....	23,100	.....=	58,800
General Rubber Co.....	2,000	100	52,300	.....=	54,400
Hagemeyer & Brunn....	18,500	.....	26,000	.....=	44,500
Edmund Reeks & Co.....	8,700	500	13,000	5,500=	27,700
TOTAL	513,300	92,200	315,600	260,100=	1,181,200

JUNE 15.—By the steamer *Maranhense*, from Manàos and Pará:

New York Commercial Co.	85,800	38,600	66,600	108,400=	299,400
A. T. Morse & Co.....	32,100	9,100	60,100	58,000=	159,300
Lawrence Johnson & Co.	72,100	14,400	4,100	.....=	90,600
Hagemeyer & Brunn....	27,500	.....	63,400	.....=	90,900
Poel & Arnold.....	11,300	9,700	27,700	34,000=	82,700
C. P. dos Santos.....	27,200	2,100	52,900	.....=	82,200
General Rubber Co.....	9,600	1,200	66,900	600=	78,300
Wm. E. Peck & Co.....	17,100	.....	7,900	.....=	25,000
G. Amsinck & Co.....	.....	.....	15,600	.....=	15,600
TOTAL	282,700	75,100	365,200	201,000=	924,000

PARA RUBBER VIA EUROPE.

		Pounds.
MAY 28.—By the *Lincoln*=Hamburg:		
New York Commercial Co (Fine)	16,500	
New York Commercial Co (Coarse)	12,000	28,500
JUNE 1.—By the *Campania*=Liverpool:		
New York Commercial Co. (Fine)	135,000	
Poel & Arnold (Fine)	89,000	
General Rubber Co. (Fine)	22,500	
New York Commercial Co. (Caucho)	53,000	299,500
JUNE 2.—By the *Mauretania*=Liverpool:		
New York Commercial Co. (Fine)		22,500
JUNE 3.—By the *President Grant*=Hamburg:		
New York Commercial Co. (Coarse)	30,000	
Poel & Arnold (Coarse)	20,000	50,000
JUNE 8.—By the *Caronia*=Liverpool:		
New York Commercial Co. (Fine)	28,000	
General Rubber Co. (Fine)	112,000	
New York Commercial Co. (Coarse)	10,000	150,000
JUNE 8.—By the *Bluecher*=Hamburg:		
New York Commercial Co. (Fine)		33,500
JUNE 11.—By the *Umbria*=Liverpool:		
New York Commercial Co. (Fine)		15,500
JUNE 11.—By the *Pennsylvania*=Hamburg:		
Poel & Arnold (Fine)	61,000	
New York Commercial Co. (Coarse)	7,000	68,000
JUNE 13.—By the *Victoria*=Hamburg:		
New York Commercial Co. (Fine)	11,500	
W. L. Gough Co. (Fine)	2,000	13,500
JUNE 17.—By the *Esperanza*=Mollendo:		
W. R. Grace & Co. (Caucho)		20,000
JUNE 18.—By the *Carmania*=Liverpool:		
General Rubber Co. (Fine)	156,000	
A. T. Morse & Co. (Coarse)	11,000	167,000
JUNE 18.—By the *Patricia*=Hamburg:		
New York Commercial Co. (Fine)		10,000
JUNE 19.—By the *Mauretania*=Liverpool:		
General Rubber Co. (Fine)	115,000	
A. T. Morse & Co. (Coarse)	15,000	130,000

OTHER NEW YORK ARRIVALS.

CENTRALS.

	Pounds.
MAY 23.—By the *Morro Castle*=Frontera:	
Harburger & Stack	2,500
H. Marquardt & Co.	2,000
E. Steiger & Co.	2,000
G. Amsinck & Co.	2,500
Manhattan Rubber Mfg. Co.	1,500 10,500

PARA EXPORTS OF INDIA-RUBBER, APRIL, 1908 (IN KILOGRAMS).

	NEW YORK.					EUROPE.					
EXPORTERS.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	TOTAL.
Schrader, Gruner & Co.	44,894	6,376	28,207	35,854	115,331	31,060	4,395	7,207	4,069	46,731	162,062
Adelbert H. Alden	124,239	31,708	59,323	200,429	415,699	2,210	1,190	5,940	13,289	22,629	438,328
Gordon & Co.	75,469	19,578	103,179	424	198,650	59,528	10,636	8,933	20,192	99,289	297,939
Scholz, Hartje & Co.	96,156	22,451	64,003	14,700	197,310	12,920	4,590	25,900	45,837	89,247	286,557
E. Pinto Alves & Co.	40,444	1,926	49,585	401	92,356	56,270	340	69,960	....	126,570	218,926
J. Marques & Co.	15,530	1,060	44,436	12,625	73,651	10,540	1,190	10,560	18,480	40,770	114,421
De Lagotellerie & Co.	6,290	510	34,073	1,680	42,553	10,673	3,110	4,224	1,104	19,111	61,664
Pires, Teixeira & Co.	8,160	....	15,510	....	23,670	12,070	....	17,490	....	29,560	53,230
R. Suarez & Co.	....	.....	3,448	....	3,448	24,247	....	9,584	14,753	48,584	52,032
R. O. Ahlers & Co.	9,526	.....	2,457	....	11,983	23,225	....	5,557	1,462	30,244	42,227
Mello & Co.	....	.....	....	....	....	17,130	3,710	7,150	....	27,990	27,990
Singlehurst, Brocklehurst & Co.	....	.....	....	....	....	9,459	....	2,104	48	11,611	11,611
Sundries	....	.....	....	....	....	100	....	....	....	100	100
Itacoatiara direct	....	.....	....	....	....	1,779	....	2,014	556	4,349	4,349
Manàos direct	310,502	69,704	122,079	279,296	781,581	266,821	50,294	101,668	398,526	817,309	1,598,890
Iquitos direct	....	....	....	....	....	17,490	899	17,310	139,564	175,263	175,263
Total, May	731,210	153,313	526,300	545,409	1,956,232	555,522	80,354	295,601	657,880	1,589,357	3,545,589
Total, April	313,696	91,149	347,747	289,426	1,042,018	924,956	131,968	277,366	681,718	2,016,008	3,058,026
Total, March	682,575	172,165	447,252	117,301	1,419,293	1,409,736	232,279	330,802	830,652	2,803,469	4,222,762
Total, February	1,049,175	230,591	493,147	164,208	1,937,121	1,832,458	235,386	524,020	991,539	3,583,403	5,520,524
Total, January	851,402	160,204	450,219	160,837	1,622,662	1,341,043	211,060	378,900	616,237	2,547,240	4,169,902

GUAYULE

WHEN PROPERLY CURED AND MIXED WITH OTHER COMPOUNDS

IS THE CHEAPEST RUBBER ON THE MARKET

There is As Much Difference Between the Various Brands of Guayule as Between Fine Para and Shoddy

Guayule made from old, sun exposed shrub is **dead, dirty and sticky,** and no amount of washing will make it clean, while rubber made from freshly cut, selected shrub, has **life, low percentage of resin and is practically clean.**

OUR **PARRA** BRAND

has been on the market for several years and is known to be the best Guayule made as to life, strength, purity and low percentage of resin.

There is a large demand for a specially prepared Guayule, dry and ready for use, which we have met in

OUR **DURANGO** BRAND

As this rubber is made exclusively from our high grade "Parra" Guayule, uniformity and absolute purity is guaranteed. No mixing in of cheap compounds to bring down the price. Durango rubber is nothing but Parra brand pure Guayule prepared so that anybody can use it.

CONTRACTS MADE FOR REGULAR MONTHLY OR WEEKLY DELIVERIES

For Samples and Quotations apply to

ED. MAURER

97 Water St., NEW YORK

Sole Representative of the MADERO interests in Mexico, largest owners of Guayule

MAY 25.—By the *El Sud*=Galveston:
Continental-Mexican Rubber Co..... *110,000

MAY 25.—By the *Vigilancia*=Tampico:
Edward Maurer.....*220,000
National Rubber Co..... *55,000
H. Marquardt & Co..... *9,000
General Export & Commercial Co. *3,500 *287,500

MAY 27.—By the *Siberia*=Greytown:
G. Amsinck & Co..... 3,500
Kunhardt & Co..... 2,500 6,000

MAY 27.—By the *Guthrune*=Bahia:
Poel & Arnold..... 11,000
New York Commercial Co..... 9,000 20,000

MAY 27.—By the *El Mar*=Galveston:
Continental Mexican Rubber Co. *28,000
Edward Maurer *22,000 *50,000

MAY 28.—By the *Antilles*=New Orleans:
A. N. Rotholz..... 3,000
Eggers & Heinlein..... 500 3,500

MAY 28.—By the *Saxon Prince*=Bahia:
Poel & Arnold..... 22,500
A. D. Hitch & Co..... 6,500
J. H. Rossbach & Bros..... 4,500 33,500

MAY 29.—By *El Alba*=Galveston:
Continental-Mexican Rubber Co..... *27,500

MAY 29.—By the *Advance*=Colon:
G. Amsinck & Co..... 15,500
Hirzel, Feltman & Co..... 13,500
Aramburo, Inc..... 3,500
Meyer Heicht..... 1,500
J. A. Pauli & Co..... 500
Andreas & Co..... 500 35,000

JUNE 1.—By the *Campania*=Liverpool:
Poel & Arnold..... 11,500
George A. Alden & Co..... 2,500 14,000

JUNE 1.—By the *Mexico*=Vera Cruz:
H. Marquardt & Co..... 2,500
Graham Hinkley Co..... 1,000
Scholz & Marterat..... 500 4,000

JUNE 1.—By the *Proteus*=New Orleans:
A. N. Rotholz..... 2,500
A. T. Morse & Co..... 1,000 3,500

JUNE 1.—By the *Cienfuegos*=Tampico:
Poel & Arnold..... *15,000
Harburger & Stack..... *3,500 *18,500

JUNE 2.—By the *Panama*=Colon:
Isaac Brandon & Bros..... 8,000
Roldau & Van Sickel..... 5,000
G. Amsinck & Co..... 2,000
Demarest Bros. Co..... 1,500
Wessels & Kulemkamp..... 500
Sperling & Williams..... 500
Aramburo, Inc..... 500 18,000

JUNE 3.—By *El Paso*=Galveston:
Continental-Mexican Rubber Co..... *27,500

JUNE 3.—By the *President Grant*=Hamburg:
George A. Alden & Co..... 7,000

JUNE 5.—By the *Prins Eithel*=Savanilla:
G. Amsinck & Co..... 2,500

JUNE 5.—By the *El Rio*=Galveston:
Continental-Mexican Rubber Co..... *87,500

JUNE 5.—By the *Voltaire*=Bahia:
New York Commercial Co..... 34,000
J. H. Rossback & Bros..... 9,000
A. D. Hitch & Co..... 6,500
A. Hirsch & Co..... 3,500 53,000

JUNE 6.—By the *Monterey*=Frontera:
Harburger & Stack..... 15,000
E. Steiger & Co..... 7,000 22,000

JUNE 8.—By the *Allianca*=Colon:
Isaac Brandon & Bros..... 5,000
Hirzel, Feltmann & Co..... 5,000
Fidanque Bros..... 1,000
Henry Maurer & Co..... 1,000 12,000

JUNE 9.—By *El Cid*=Galveston:
Continental-Mexican Rubber Co..... *27,500

JUNE 11.—By the *Creole*=New Orleans:
A. T. Morse & Co..... 8,500
L. Stein & Co..... 1,000
Eggers & Heinlein..... 1,000 10,500

JUNE 12.—By the *Magdalena*=Colombia:
G. Amsinck & Co..... 2,500
Roldau & Van Sickel..... 2,500
Isaac Brandon & Bros..... 2,500
H. W. Peabody & Co..... 1,000 8,500

JUNE 12.—By the *Yumuri*=Tampico:
Edward Maurer.....*150,000
J. A. Kendall & Co..... *30,000
H. Marquardt & Co..... *3,500
General Export & Commercial Co. *2,500 *186,000

JUNE 13.—By the *Finance*=Colon:
G. Amsinck & Co..... 3,500
Isaac Brandon & Bros..... 2,000
A. Rosenthal Sons..... 1,500
Roldau & Van Sickle..... 1,000
Bartling & De Leon..... 1,000 9,000

JUNE 15.—By *El Valle*=Galveston:
Continental-Mexican Rubber Co..... *27,500

JUNE 15.—By the *Merida*=Frontera:
Harburger & Stack..... 5,500
American Trading Co..... 5,500
E. Steiger & Co..... 2,500
E. G. Phister..... 2,000
Graham Hinkley & Co..... 2,000
H. Marquardt & Co..... 1,000 18,500

JUNE 17.—By *El Alba*=Galveston:
Continental-Mexican Rubber Co..... *125,000

JUNE 17.—By the *Esperanza*=Colon:
G. Amsinck & Co..... 13,500
Isaac Brandon & Bros..... 9,500
Hirzel, Feltmann & Co..... 3,500
Demarest Bros. & Co..... 3,000
R. G. Barthold..... 2,000
Suzarte & Whitney..... 1,500
Andreas & Co..... 1,500
J. & J. Lansdale..... 1,000 35,500

JUNE 19.—By the *Grecian Prince*=Bahia:
Poel & Arnold..... 42,000
J. H. Rossbach & Bros..... 25,000
A. Hirsch & Co..... 7,000 74,000

JUNE 19.—By *El Norte*=Galveston:
Continental-Mexican Rubber Co..... *55,000

JUNE 20.—By the *Morro Castle*=Vera Cruz:
H. Marquardt & Co..... 5,000
American Trading Co..... 2,000 7,000

JUNE 22.—By the *Byron*=Bahia:
A. Hirsch & Co..... 18,000
J. H. Rossbach & Bros..... 5,500 23,500

JUNE 22.—By the *Vigilancia*=Tampico:
Edward Maurer..... *56,000
Poel & Arnold..... *22,500
In transit *35,000 *113,500

*This sign, in connection with imports of Centrals, denotes Guayule rubber.

AFRICANS.

		POUNDS.
MAY 25.—By the *Arabic*=Liverpool:		
Poel & Arnold.....		126,000
MAY 25.—By the *Savoie*=Havre:		
George A. Alden & Co.....		7,000
MAY 27.—By the *Kroonland*=Antwerp:		
A. T. Morse & Co.....	56,000	
Poel & Arnold.....	11,000	
Henry A. Gould Co.....	2,500	69,500
JUNE 27.—By the *Luisiane*=Bordeaux:		
General Rubber Co.....		13,500
JUNE 28.—By the *Lincoln*=Hamburg:		
George A. Alden & Co.....	13,000	
A. T. Morse & Co.....	22,500	35,500
JUNE 1.—By the *Campania*=Liverpool:		
George A. Alden & Co.....	25,000	
Poel & Arnold.....	25,000	50,000
JUNE 1.—By the *Peninsular*=Lisbon:		
General Rubber Co.....	45,000	
Poel & Arnold.....	45,000	
George A. Alden & Co.....	22,500	112,500
JUNE 1.—By the *Amerika*=Hamburg:		
Poel & Arnold.....	11,500	
General Rubber Co.....	8,000	19,500
JUNE 2.—By the *Finland*=Antwerp:		
A. T. Morse & Co.....	20,000	
Raw Products Co.....	5,000	25,000
JUNE 3.—By the *President Grant*=Hamburg:		
George A. Alden & Co.....	7,000	
W. L. Gough Co.....	5,500	
A. T. Morse & Co.....	2,500	15,000
JUNE 6.—By the *Trignac*=Bordeaux:		
W. L. Gough Co.....		7,000
JUNE 8.—By the *Caronia*=Liverpool:		
George A. Alden & Co.....	11,500	
W. L. Gough Co.....	3,500	15,000
JUNE 9.—By the *Potsdam*=Rotterdam:		
A. T. Morse & Co.....		6,500
JUNE 10.—By the *Vaderland*=Antwerp:		
George A. Alden & Co.....	145,000	
Poel & Arnold.....	22,000	
A. T. Morse & Co.....	13,500	
Robinson & Co.....	20,000	
Joseph Cantor.....	7,000	
Muller, Schall & Co.....	6,500	214,000
JUNE 11.—By the *Umbria*=Liverpool:		
George A. Alden & Co.....	22,500	
General Rubber Co.....	4,500	27,000
JUNE 11.—By the *Pennsylvania*=Hamburg:		
George A. Alden & Co.....	22,500	
Poel & Arnold.....	14,000	36,500
JUNE 12.—By the *Cedric*=Liverpool:		
Poel & Arnold.....		45,000
JUNE 12.—By the *Valetta*=Lisbon:		
George A. Alden & Co.....		11,000
JUNE 13.—By the *La Savoie*=Havre:		
A. T. Morse & Co.....	30,000	
George A. Alden & Co.....	22,000	52,000
JUNE 16.—By the *Zeeland*=Antwerp:		
W. L. Gough Co.....	11,500	
Rubber Trading Co.....	3,500	15,000
JUNE 18.—By the *Patricia*=Hamburg:		
W. L. Gough Co.....	38,000	
George A. Alden & Co.....	22,000	
Rubber Trading Co.....	13,500	
Poel & Arnold.....	4,500	78,000
JUNE 18.—By the *Majestic*=Havre:		
George A. Alden & Co.....		65,000
JUNE 10.—By the *Mauretania*=Liverpool:		
General Rubber Co.....		11,000
JUNE 22.—By the *Arabic*=Liverpool:		
General Rubber Co.....		50,000

EAST INDIAN.

		POUNDS.
MAY 25.—By the *Philadelphia*=London:		
A. T. Morse & Co.....		*11,500
MAY 26.—By the *Minnehaha*=London:		
George A. Alden & Co.....	*79,000	
Robinson & Stiles.....	7,000	86,000
MAY 27.—By the *Oceanic*=Liverpool:		
Poel & Arnold.....		*17,500
JUNE 2.—By the *Minneapolis*=London:		
General Rubber Co.....	*6,500	
George A. Alden & Co.....	*2,500	
A. T. Morse & Co.....	*3,500	*12,500
JUNE 4.—By the *Teutonic*=London:		
Poel & Arnold.....	*11,000	
A. T. Morse & Co.....	*9,000	*20,000
JUNE 8.—By the *Minnetonka*=London:		
A. T. Morse & Co.....	*17,000	
George A. Alden & Co.....	*9,000	
Robinson & Co.....	16,000	42,000
JUNE 8.—By the *New York*=London:		
A. T. Morse & Co.....		*9,000
JUNE 10.—By the *Vaderland*=Antwerp:		
Geo. A. Alden & Co.....		*6,000
JUNE 10.—By the *St. Patrick*=Singapore:		
Otto Isenstein & Co.....	40,000	
George A. Alden & Co.....	15,000	
Poel & Arnold.....	10,000	65,000
JUNE 20.—By the *Korona*=Colombo:		
A. T. Morse & Co.....		*5,500
JUNE 20.—By the *Wray Castle*=Singapore:		
Otto Isenstein & Co.....		22,500
JUNE 22.—By the *Minnehaha*=London:		
Robinson & Co.....	5,500	
Muller, Schall & Co.....	*2,500	8,000

*Denotes plantation rubber.

GUTTA-JELUTONG.

JUNE 10.—By the *St. Patrick*=Singapore:		
Heabler & Co.....	225,000	
W. L. Gough Co.....	60,000	
L. C. Hopkins Co.....	125,000	410,000
JUNE 12.—By the *Cedric*=Liverpool:		
Robinson & Co.....	65,000	
Kurth & Wolff.....	22,000	87,000
JUNE 20.—By the *Wray Castle*=Singapore:		
Heabler & Co.....	225,000	
M. Joachimson.....	100,000	
W. L. Gough Co.....	55,000	380,000

GUTTA-PERCHA.

	POUNDS.
JUNE 18.—By the *Patricia*=Hamburg.	
Robert Soltau & Co.....	7,000

BALATA.

MAY 25.—By the *Korona*=Demerara:	
George A. Alden & Co.....	6,500
JUNE 5.—By the *Navarre*=Trinidad:	
Frame & Co.....	2,500
JUNE 8.—By the *New York*=London:	
Earle Brothers.....	13,500
JUNE 18.—By the *Guiana*=Demerara:	
Frame & Co..... 13,500	
Middleton & Co..... 2,000	15,500

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—MAY.

Imports:	Pounds.	Value.
India-rubber	6,496,019	$3,723,456
Balata	9,712	4,474
Gutta-percha	17,087	10,021
Gutta-jelutong	178,325	13,446
Total	6,701,143	$3,751,397
Exports:		
India-rubber	67,351	40,215
Reclaimed rubber.....	47,458	6,687
Rubber scrap imported....	*166,889	11,605

BOSTON ARRIVALS.

MAY 1.—By the *Arcadia*=Hamburg:	
W. L. Gough Co., Africans.....	15,000
MAY 4.—By the *Bathiania*=Hamburg:	
Poel & Arnold, Africans.....	4,500
MAY 27.—By the *Saxonia*=Liverpool:	
George A. Alden & Co., Africans.....	11,500
MAY 22.—By the *Kennebec*=Singapore:	
George A. Alden & Co., Gutta-jelutong..	381,000
Poel & Arnold, Gutta-percha.....	13,000
MAY 23.—By the *Templemore*=Liverpool:	
New York Commercial Co., Guayule....	190,000
Total	615,000

INDIA RUBBER WORLD

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United States Rubber Imports.

FOR TEN MONTHS ENDING APRIL 30.

	1906.	1907.	1908.
United Kingdom ..... *pounds*	7,541,338	8,711,994	4,147,983
Germany	3,208,255	3,799,499	2,114,262
Other Europe	7,070,708	7,749,179	5,243,147
Central America and British Honduras	1,066,378	971,533	818,198
Mexico	1,091,983	5,510,253	6,987,337
Brazil	26,033,862	34,907,630	25,673,701
Other South America	1,568,850	1,638,645	1,338,445
East Indies	1,667,605	1,832,423	989,015
Other countries	24,738	29,503	36,683
Total	49,273,717	65,150,659	47,348,771
Value	$38,519,189	$50,578,759	$28,496,365
Average per pound	78.1 cents.	77.6 cents.	60.1 cents.

Plantation Rubber From the Far East.

STATISTICS FOR FOUR MONTHS ENDING APRIL 30.

EXPORTS FROM THE FEDERATED MALAY STATES.

	1907.	1908.
Perak ..... *pounds*	71,853	137,507
Selangor	389,784	551,730
Negri Sembilan	136,273	275,943
Pahang	nil	nil
Total	597,910	965,180

TOTAL EXPORTS FROM MALAYA (INCLUDING ABOVE).

	Singapore.	Penang.	Total.
To Great Britain ..... *pounds*	538,933	267,733	806,666
To Other Europe	28,667	56,400	85,067
To Japan	3,333	.....	3,333
To Australia	6,433	.....	6,433
To Ceylon	75,867	22,959	98,826
Total	653,233	347,092	1,000,325
Same months, 1907	413,834	46,961	460,795

—Barlow & Co.'s Prices Current.

RUBBER THE PRODUCE OF CEYLON.

[These figures carry the record up to May 4.]

	1907.	1908.
To Great Britain ..... *pounds*	106,590	125,574
To Belgium	1,820	.....
To France	.....	119
To Germany	9,837	8,743
To Italy	.....	880
To India	112	896
To Australia	799	10,276
To United States	41,467	72,280
Total	160,625	218,768

Antwerp.

ANTWERP RUBBER STATISTICS FOR MAY.

DETAILS.	1908.	1907.	1906.	1905.	1904.
Stocks, April 30..*kilos*	717,913	461,573	880,438	635,875	441,621
Arrivals in May	415,404	644,324	636,759	287,333	737,526
Congo sorts	337,368	557,136	536,564	214,751	685,086
Other sorts	78,036	87,188	120,195	72,582	52,440
Aggregating	1,133,317	1,105,879	1,537,217	923,208	1,179,147
Sales in May	361,740	252,983	811,966	576,104	436,932
Stocks, May 31	771,577	752,914	725,251	347,104	742,215
Arrivals since Jan. 1	2,144,762	2,281,955	2,728,448	2,220,288	2,554,426
Congo sorts	1,859,791	1,938,228	2,110,079	1,757,649	2,128,132
Other sorts	284,971	343,727	618,369	462,639	426,294
Sales since Jan. 1	2,380,079	2,187,225	2,738,384	2,414,545	2,423,111

RUBBER ARRIVALS FROM THE CONGO.

APRIL 22.—By the steamer *Albertville:*

Bunge & Co.	(Société Générale Africaine) *kilos*	44,000	
do		23,500	
do	(Chemins de fer Grands Lacs)	9,600	
do	(Société Anversoise)	22,200	
do	(Comptoir Commercial Congolais)	27,300	
do	(Comité Special Katanga)	1,500	
Société Coloniale Anversoise	(Société Ikelemba)	4,500	
do	(Belge due Haut Congo)	4,200	
do	(Cie. du Kasai)	57,300	
L. & W. Van de Velde		2,600	196,700

MAY 13.—By the steamer *Leopoldville:*

Bunge & Co.	(Société Générale Africaine) *kilos*	70,000	
"		45,500	
"	(Anversoise)	5,100	
"	(Chemins de fer Grands Lacs)	14,000	
"	(Société Abir)	9,000	
"	(Comité Special Katanga)	8,000	
"	(Comptoir Commercial Congolais)	16,000	
"		2,200	
Société Coloniale Anversoise	(Belge du Haut Congo)	14,900	
"	(Cie. du Lomami)	16,100	
L. & W. Van de Velde	(Cie. du Kasai)	168,000	
"		4,000	
M. S. Cols		350	373,150

JUNE 2.—By the steamer *Bruxellesville:*

Bunge & Co.	(Société Générale Africaine) *kilos*	44,200	
Do		6,800	
Do	(Anversoise)	7,600	
Do	(Cie. du Kasai)	123,200	
Do	Comité Special Katanga)	2,200	
Do	(Comptoir Commercial Congolais)	1,400	
Do	(Chemins de fer Grands Lacs)	9,700	
Société Coloniale Anversoise	(Belge du Haut Congo)	950	
Do	(Cie. du Lomami)	4,850	
Do	(Süd Cameroon)	11,650	
Société Generale de Commerce	(Alimaienne)	8,400	
Charles Dethier	(American Congo Co.)	2,500	
L. & W. Van de Velde		1,500	224,950

FORSYTH PATENT FOR PACKING WITH PLIABLE SHEET METAL INSERTION, SUSTAINED BY THE COURTS

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U. S. Letters Patent, dated April 11, 1899 to James Bennett Forsyth, which has been the subject of litigation extending through the several United States Courts, to the United States Supreme Court, has been fully and broadly sustained, and covers PLIABLE SHEET METAL INSERTION PACKING in sheet, Tubular and other forms.

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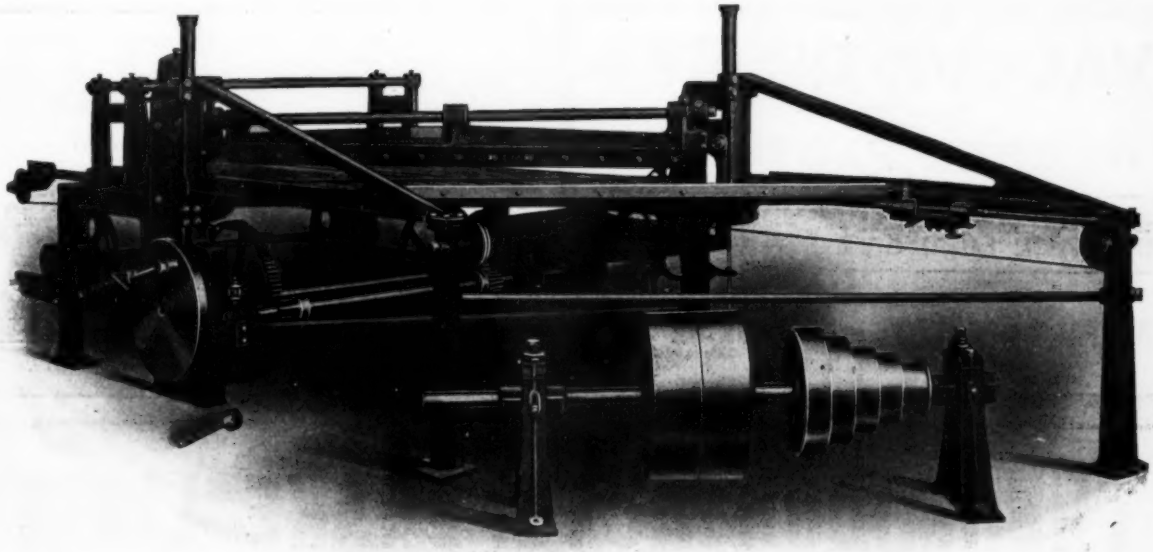

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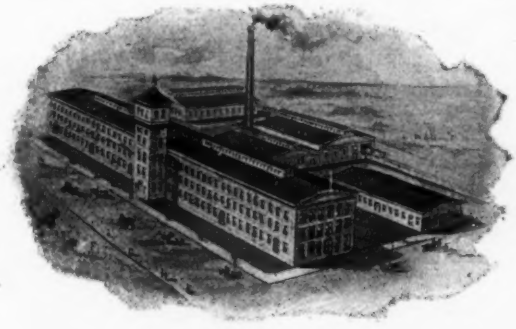

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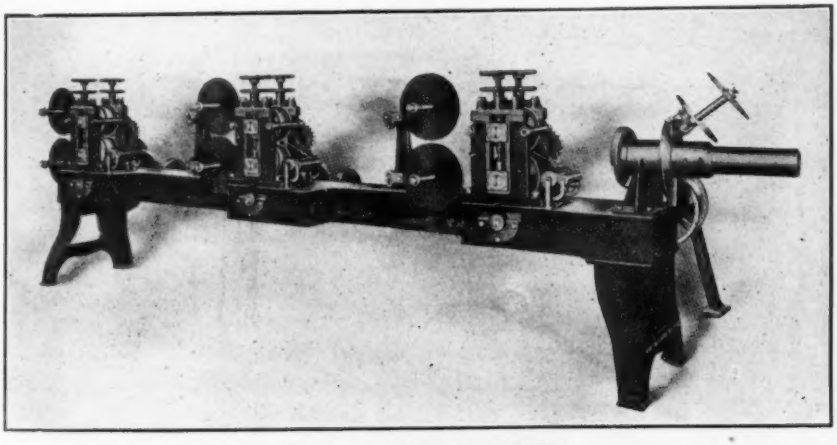

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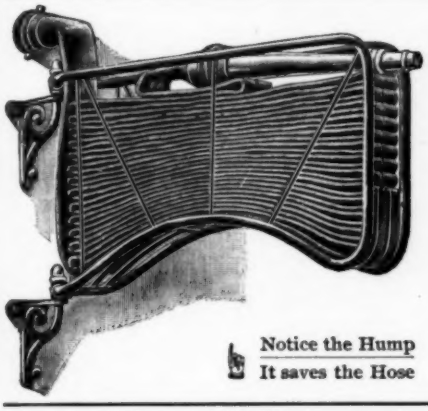

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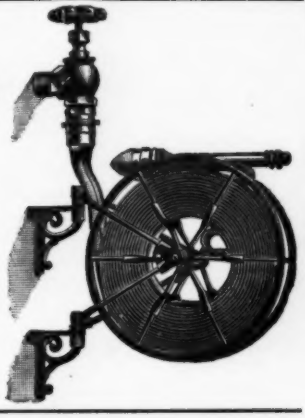

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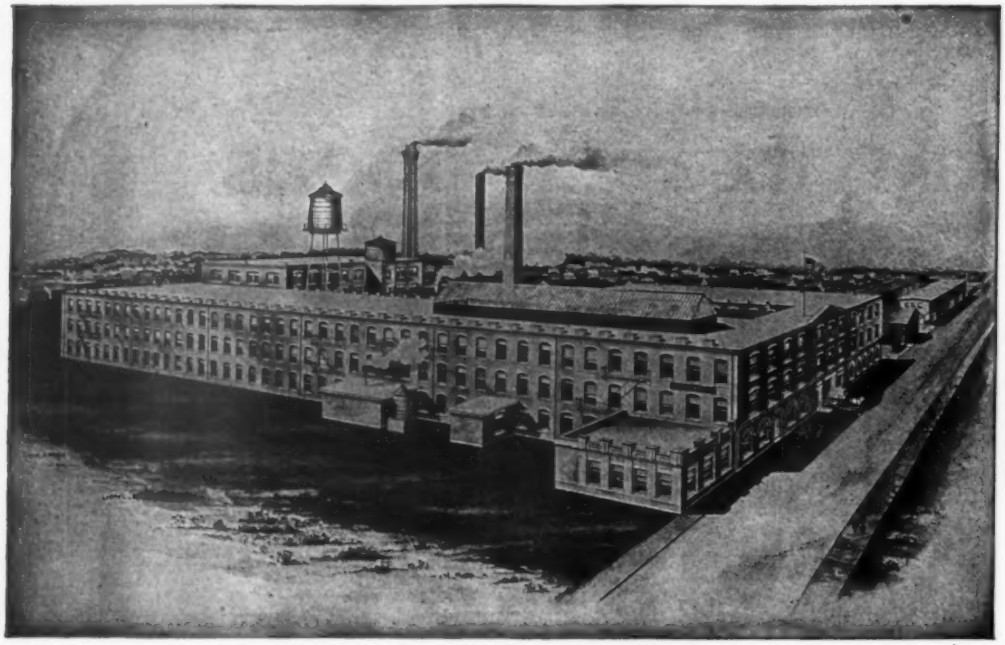

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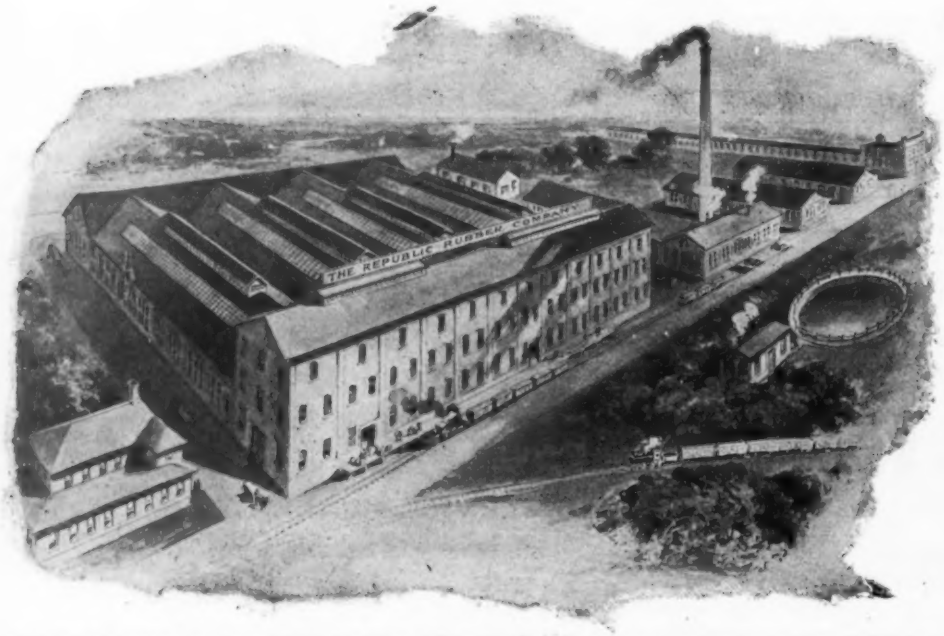

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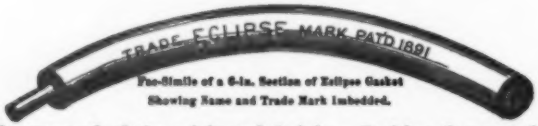

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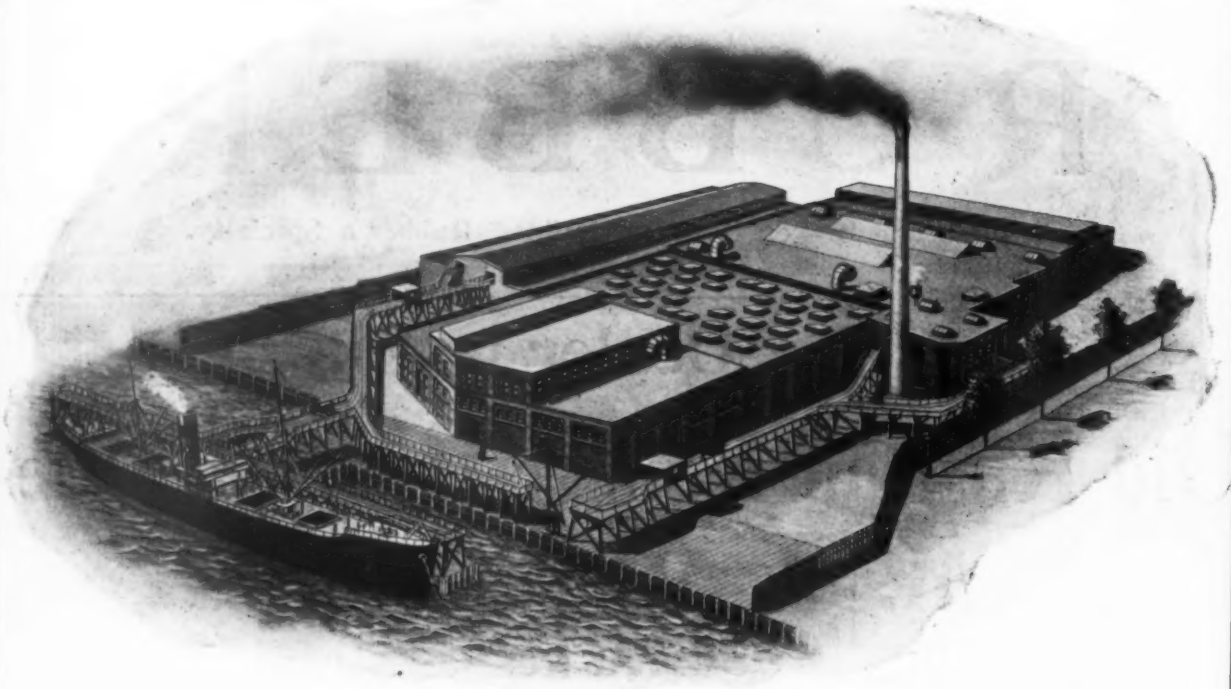

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Turpentine, Benzol, Special Solvents and All Chemicals Required in the Manufacture of Rubber Products.

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AUTOMOBILE AND BICYCLE TIRE FABRICS

SHEETINGS AND DRILLS. SEA ISLAND, EGYPTIAN, AND PEELER YARNS,
AND FABRICS IN REGULAR AND SPECIAL CONSTRUCTION.

Mention The India Rubber World when you write.

FEDERAL RUBBER CO.
Manufacturers of
HIGH-GRADE MECHANICAL GOODS
Write for Samples and Prices
MILWAUKEE, WIS. FACTORY, CUDAHY, WIS.

Pump Valves a Specialty.
We can furnish a valve to meet any conditions.

Best quality Valve Discs, standard and special sizes.
Ammonia Rings.

Send for our New Valve Circular. It will interest you.
ELKHART RUBBER WORKS,
ELKHART, IND.

Springfield Tire & Rubber Company
Manufacturers of
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ANALYTICAL AND CONSULTING CHEMIST
Twenty-five Years' Experience in Methods for Recovering Rubber from Waste.
Analysis Made of Compounded Rubbers
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No. 26 Broad Street, Boston, Mass.

Special Notice TO THE Rubber Planting World
PARA, CASTILLOA, CEARA, ETC.

Seeds and stumps forwarded to all parts of the World. Orders being booked from Planters, Merchants, Govt. Botanical and Agricultural Departments, Officials, Consuls, Missionaries, Lawyers, etc., from all parts of the Globe.

A Government order by wire, Khartoum via Cairo (Egypt) 7th March, 1908: "Send 300,000 Ceara seed, 10,000 ditto stumps, 100,000 Hevea seed, 10,000 ditto stumps, 5,000 Castilloa seed."

An Agricultural Department order from Dutch West Indies, Paramaribo, 18th January, 1908: "Please send me as soon as you have fresh seed 90,000 (ninety thousand) seeds of Hevea Brasiliensis; your method of packing is all right; the seeds shipped last year to the Superintendent of the Botanic Garden arrived in good condition."

A planting Company's order by telegraph, Berlin, 7th March, 1908: "Please send 50,000 Hevea stumps, arrival in May, Hamburg Noerman Line, the purchase money to be paid on signing, and in exchange for documents Hong Kong & Shanghai Banking Corporation. Please confirm order."

A Surinam Planter's order who purchased 20,000 Hevea seeds last year, 17th February, 1908: "I now order from you 20,000 Hevea seeds to be sent by parcel post packed as before; please send selected seed from mature trees. The best results we got are from your seeds packed as above and sent by Parcel post."

Special offer of seeds and stumps, with circulars, on view at the office of this paper and post free on application.

Seeds of celebrated Caravonica and Spence Cotton. For green manuring, Crotolaria Striata, Vigna, Groundnuts, etc. Price on application.

See further particulars in our advertisement in this paper, page 41.

Telegraphic Address: J. P. WILLIAM & BROS.,
William, Henaratgoda, Ceylon, Tropical Seed and Plants Merchants,
Liber's, A.1. and A.B.C. Codes used. Henaratgoda, Ceylon.
Also private codes.
Mention The India Rubber World when you write.

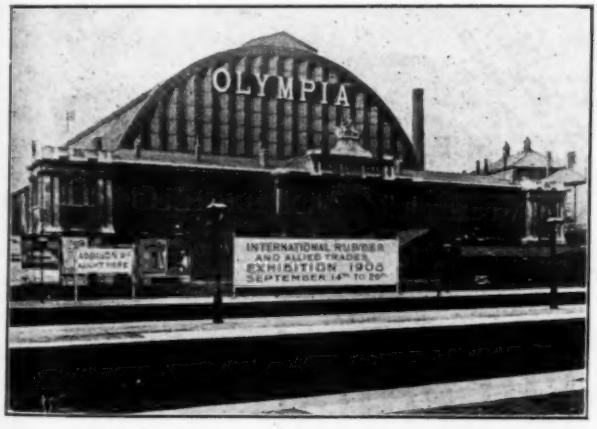
The Publishers' Page

"The India Rubber World" at Olympia.

As readers of THE INDIA RUBBER WORLD know, there is to be held in London next September, a very important International Rubber and Allied Trades Exhibition. Having in view the character and importance in rubber circles of those whose attendance is assured, the coming gathering, apart from the interest and variety of the exhibition proper, may justly be referred to as a Rubber Congress. Men of prominence in every department of the rubber interest have been scheduled to take part at the London exhibition, and the ultimate value of the undertaking cannot well be over-estimated. THE INDIA RUBBER WORLD will be represented, and the readers of the paper may hope to be kept well informed, through its pages, of what occurs at Olympia of interest to them. The illustration on this page represents the Olympia—the great hall in which the rubber exhibition is to be held.

The Need of a Rubber Directory.

The earliest attempt at a directory of the rubber trade in the United States was in the shape of an appendix of a few pages to a then standard directory of the paper trade. It is interesting to look over the book even now, for the help it gives one in appreciating how the rubber business has grown. Just think of it—only three rubber factories listed in Ohio! Now the rubber industry in Ohio alone amounts to more than it did then throughout the United States. The growth has been marked in other states, besides which there has been a great and continuous increase in the number of wholesalers, jobbers and retailers in rubber goods, and in the allied trades. It might have been easy enough at one time for a live rubber man to keep a mental list of everybody in the trade who amounted to anything.



WHERE THE RUBBER EXHIBITION WILL BE HELD.

But times have changed, and to-day people need trade directories.

"The India Rubber World" Directory.

The Rubber Trade Directory issued by THE INDIA RUBBER WORLD is an outgrowth of lists and records kept in the Publication office for use there, its production in this shape having been the result in part of many suggestions, from both inside the trade and without, for something in the shape of a directory of rubber manufacturers and dealers. The book represents an amount of effort out of proportion to its size, and it is offered in the belief that it is comprehensive, for a first effort, and accurate. But the Publishers prefer to accept the testimony of others in regard to the book rather than their own, possibly prejudiced, opinions in the matter.

Expressions regarding the book received from very many members of the trade have been more than encouraging.

The Rubber Trade Directory in Europe.

We have been gratified by the cordial support which the book has received abroad. Not only have private letters commending it been received, but the trade papers have been very complimentary. Thus the *Gummi-Zeitung*, of Berlin, the organ of the German rubber trade, concludes a lengthy notice with the words:

> "This Rubber Trade Directory 1908 will prove interesting and useful, not only to the business world of the United States, but likewise to that of the Old World. Both its get-up and contents are a credit to the active publishers."

The British *India-Rubber Journal* (London) also gives the book a favorable notice, ending in this style:

> "The Directory information appears to be very complete, and the work is one which we can heartily recommend to our readers."

A Commendation from Canada.

The *Canadian Manufacturer*, of Toronto, an important weekly journal, says of the Rubber Trade Directory:

> "The book should be invaluable to any firm desiring to keep in touch with firms in this line. The printing and binding are of such quality as to be a credit to the publishers."

A List of Trade Marks.

But if the names and addresses of rubber firms have become too numerous to be kept in mind by even the best informed members of the trade, how about the already large and growing list of trade-marks used in connection with all kinds of rubber goods, and other goods sold in connection with rubber? These are all included in the Rubber Trade Directory, and this department alone has been voted by a number of our patrons to be worth the whole price of the book.

Suggestions Welcomed.

It would be especially gratifying to the Publishers to have any suggestions from patrons aimed at the improvement of the Trade Directory in coming editions. It has been and is the desire of the management to make the book not only comprehensive but also as accurate as possible.

THE ALUMINUM FLAKE COMPANY
Physical condition remarkable.
Base, Metallic Aluminum
Gravity 2.58
Absolutely Inert
MINERS AND REFINERS OF
ALUMINUM FLAKE
An ORIGINAL PIGMENT, Suited to All Lines of Rubber Work
It toughens Rubber, gives it life and lightens gravity
THE ALUMINUM FLAKE COMPANY, Akron, O.

The Carter Bell Mfg. Co.
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WHITE and BLACK
Rubber Substitutes

As a Filler
will make Rubber Goods that will stand Heat or Acid.
Fossil Flour
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Miners and Millers of High Grade Domestic
TALC AND SOAPSTONE
Samples and Quotations Submitted for Immediate and Future Deliveries
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THE RUBBER CHEMICAL COMPANY, Ltd.
Telegrams: "Seringa, Birmingham." Telephone: 4533 Birmingham.
SERINGA BUILDINGS, LUDGATE HILL, BIRMINGHAM, ENGLAND.
"ATMOID"
The lightest Rubber Drug known.
"NANTUSI"
for vulcanising and preserving Rubber.
SUBSTITUTES, free from Acid
(Seringa Brand), WHITE, DARK AND RED.
SULPHUR SPECIALLY PREPARED FOR THE RUBBER TRADE.
One of our largest customers report that it gives on analysis, Mineral Matter .036%, reaction neutral; Arsenic absent, and in our opinion is an exceptionally good sulphur and free from acid. CORRESPONDENCE INVITED.

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Manufacturers of
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FLOUR SULPHUR
Especially adapted to the use of
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ERIE RUBBER WORKS
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Manufacturers of
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Special Patented Self-Sealing Rubber Stoppers
Write for Prices

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(IN 9 SIZES)

ARE MADE OF BEST RUBBER. Don't Slip. Outwear All Others.

Foster, Catspaw and Tredair Heels are the only Heels made under FOSTER PATENTS and in common with the

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Cannot Be Made by Other Concerns — Handsome Profits to Dealers

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FOSTER RUBBER CO.

Factory, WALPOLE, MASS.

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A patented waterproof cloth embracing all weights from muslin to 12/0 duck; strictly waterproof under all conditions, and especially adapted to the manufacture of Paulins, Horse Covers, Hatch Covers, Car Roof Linings, Canvas Shoes, Steam and Cold Water Packing, Canvas Belting, Traces, etc., etc., guaranteed to be strictly rot, acid, oil, sulphur and water proof.

"ROOFING"

We are the manufacturers of a textile roofing guaranteed for ten years; not affected by extreme heat or cold, acids or sulphur. Positively no contraction or expansion.

"BAGGING"

We are also water and acid proofers of all kinds of bagging fabrics, such as cement, plaster, fertilizer and sugar bags. Samples will be furnished on application.

Brattice cloth, and cloth for irrigation hose are among our specialties; write for samples.

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SEAMLESS RUBBER GOODS

It Stands for QUALITY and DURABILITY

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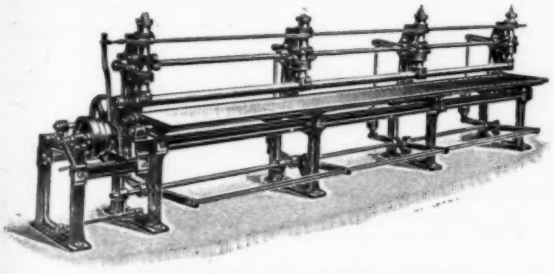

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Automobile Tubes and Tires

High and low pressure—Self lubricating—Impervious to action of steam, oils, acids and alkalies. Especially adapted for mining work and steam hammers

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Small Advertisement Department.

SITUATIONS WANTED

SALES AGENT.—Broker with first class connections would like to handle plantation grown india-rubber. Address P. L. A., care of THE INDIA RUBBER WORLD. (128)

A YOUNG MAN who has wide experience in Central and South America, and who knows both rubber and lumber, is open for a position. Address J. N. B., care of THE INDIA RUBBER WORLD. (129)

MILL ROOM FOREMAN.—Position wanted as mill room foreman by man having ten years' experience. Understands compounding. Address M. O., care of THE INDIA RUBBER WORLD. (133)

The developer of one of the largest and most successful rubber wire and cable factories of the day is now at leisure and open to engagement. A wire and cable department in your factory, or a new plant can be made very profitable. The present is an excellent time to equip, as prices are low, deliveries prompt and labor plentiful. Address Rubber Wire Engineer, care of "The India Rubber World." (1085)

SITUATIONS OPEN

PRESSMAN.—An old established company with new factory in California requires thoroughly competent and reliable man to take charge of small press work. Address W. F., care of THE INDIA RUBBER WORLD. (102)

SUPERINTENDENT WANTED.—Norwegian with experience in manufacturing rubber shoes wanted for Norway factory. Address NORWAY, care of THE INDIA RUBBER WORLD. (106)

WANTED.—A mechanical rubber goods salesman for New York and Philadelphia. State age, experience and salary expected. A good position for the right man. Address B. C. C., care of THE INDIA RUBBER WORLD. (122)

WANTED.—Experienced salesman on press and mold work and all kinds of rubber cloths. Must be acquainted with the trade in New York City. Address R. P., care of THE INDIA RUBBER WORLD. (123)

SUPERINTENDENT WANTED.—One thoroughly experienced in compounding and making mechanical goods, particularly jar rings. State full history of experience and ability with references. Address B. G., care of THE INDIA RUBBER WORLD. (124)

RUBBER BAND MAN WANTED, thoroughly understanding the manufacture of high rubber bands. Address BANDS, care of THE INDIA RUBBER WORLD. (125)

BELT AND HOSE MAKERS.—Old established company with new factory in California requires first class belt maker, also hose maker. Address W. B., care of THE INDIA RUBBER WORLD. (126)

TIRE MAKER.—Wanted, a first class experienced automobile shoe maker, good opportunity for the right man. Address G., care of THE INDIA RUBBER WORLD. (127)

MASTER MECHANIC.—Old established company with new factory in California requires thoroughly reliable competent man to keep machinery in order. Must be familiar with all devices used in modern plant making mechanical rubber goods. Address CALIFORNIA, care of THE INDIA RUBBER WORLD. (132)

FOR SALE

FOR SALE.—In Jersey City a rubber factory with all necessary machinery for hard or soft rubber goods. Address JERSEY CITY, care of THE INDIA RUBBER WORLD. (112)

FOR SALE

FOR SALE.—United States patent for re-enforcing hard rubber. Makes hard rubber goods indestructible. Address B. Z., care of THE INDIA RUBBER WORLD. (113)

FOR SALE.—Fully equipped factory in Jersey City. Good condition; ready to operate. Address I. I., care of THE INDIA RUBBER WORLD. (114)

Five (5) Combination and Friction Calenders. Twenty-five (25) Grinders of all sizes. Five (5) Washers and Crackers. Twenty (20) Vulcanizers of all sizes. Twelve (12) Hydraulic and Hand Presses, some with Platems 40" square. Three (3) Hydraulic Presses 4-openings, Platems 48" square and 16" rams. Several Tubing Machines of different sizes. One (1) Refiner. Three (3) large Rubber Mill Engines. Several Fans. A large lot of shafting of all sizes. One set of a dozen different designs of Mat Moulds. A large lot of Rubber Sole Moulds. A lot of miscellaneous Rubber Mill Machinery that will be sold cheap for *Cash*. For all further particulars write to PHILIP MCGROHY, TRENTON, N. J.

FOR SALE.—Factory Rubber Waste from Rubber Cement; cleaned at a low price; sample sent free. UNITED STATES WASTE RUBBER CO., No. 487 North Warren Avenue, Brockton, Mass.

HARD RUBBER PHONOGRAPH NEEDLE for all disc machines. Superior to steel and other needles. Saves records, and gives clear, resonant renditions without scratching. Patent pending. Inventor would like to hear from hard rubber manufacturers. Will sell or place on royalty basis. Address N., care of THE INDIA RUBBER WORLD. (131)

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1 12" x 20" 3 roll Farrel washer complete
1 16" x 40" 2 roll Farrel mixer complete
1 Pierce Mechanical Mixer
1 No. 2 3½" bore Clark Insulating Machine

THE WIRE & TELEPHONE CO. of AMERICA, ROME, N.Y. (130)

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PARKER, STEARNS & COMPANY
Makers of
Fine Rubber Goods
228 & 229 SOUTH STREET NEW YORK

LASTS FOR RUBBER SHOES LAST DESIGNING A SPECIALTY
MIDDLESEX LAST CO. Boston, Mass., U. S. A.

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FREE FROM ACID. MADE FROM REFINED RAPE SEED OIL

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GUARANTEED RELIABLE, AND NOT TO VARY.

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First Qualities. ES Brand.

CRIMSON and GOLDEN SULPHURETS OF ANTIMONY

Always contains same constant percentage of Free Sulphur.

Actien Ges. Georg Egestorff's Salzwerke

Linden, near Hanover, Germany.

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A Zinc Product More Effective than Zinc Oxide

Excels in

COLOR, STRENGTH, LIFE, UNIFORMITY

Highly Specialized for the Rubber Trade

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Plantation of 3,000 acres, partially developed and producing. 43,000 planted rubber trees growing, of which 20,000 are of producing age.

Stock sold for cash or on installments. Cash stock to participate in dividends from the start. Installment stock to draw dividends at end of installment period (50 months). Stock, $50 per share. No less than 5 shares sold to any one.

Cash received for stock sold to be used for development purposes only.

Prospectus and other information on application.

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Reclaimed Rubber

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Double and Single End Spreaders, Doubling Machines, Churns, Etc.

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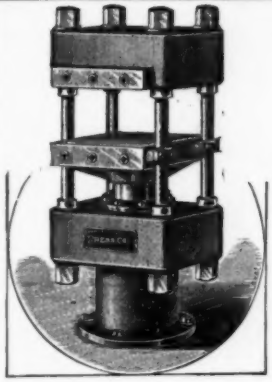

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Clean and convenient, absence of revolving shafting and pulleys, power in operation only when needed—are some of the reasons for its adoption. And then, too, the operating expense is less.

Why not consider it for that Tubing or Insulating Machine you intend to order from us.

PARTICULARS GLADLY GIVEN

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Acid Proof, Alkaline Proof, Electrolysis Proof.

NO PITCH
NO TAR
NO ASPHALTUM

A pure natural Hydro-Carbon, elastic, resilient product, is being used extensively in Hose packings, moulded goods, carriage drills, wire covering, Hard Rubber, and various other purposes.

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Hose All Kinds
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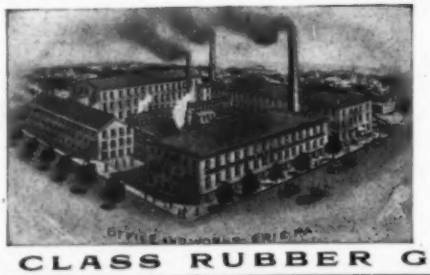

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THE DAYTON RUBBER MFG. CO.

MAKERS OF

Mechanical Rubber Goods

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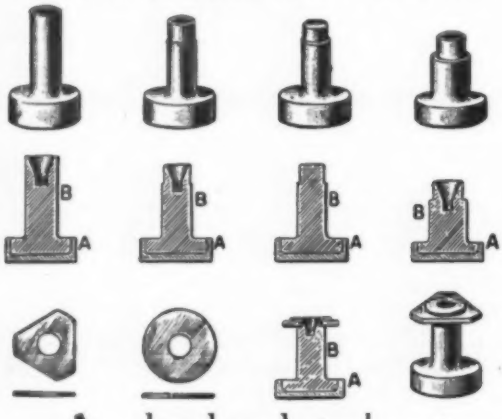

A—hardened steel part
B—soft steel part

Manufactured by . . . **ED. DUBIED & CO.**
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CH. DIEN, Sole Importer
45 West 34th St., New York

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FIRST CLASS SEAMLESS
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Best facilities for
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Bands and Fittings:

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Brass Fittings for Rubber Goods of Every Description:

Diving Apparatus.

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ESTABLISHED 1855.

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IMPORTERS OF

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BOSTON.

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Containing No Oils or Other Added Adulterants — **A Live, Permanent Stock**

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BY AN IMPROVED PROCESS.

A strictly high-grade, superior product. Absolutely bone dry, clean and reliable at all times. Specially adapted for the insulated wire trade.

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Note the hose supports; they remain on the arm of rack as hose is drawn off.

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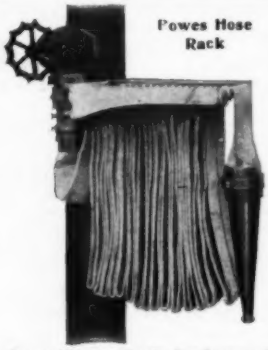

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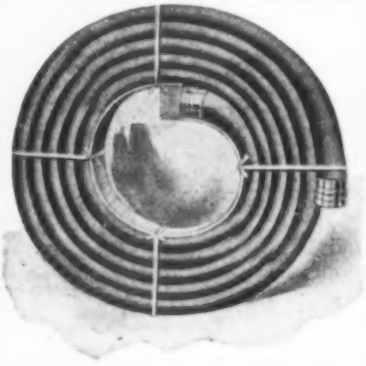

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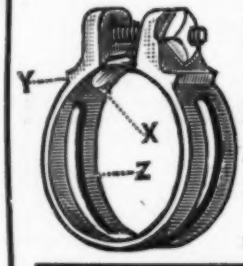

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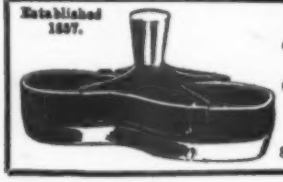

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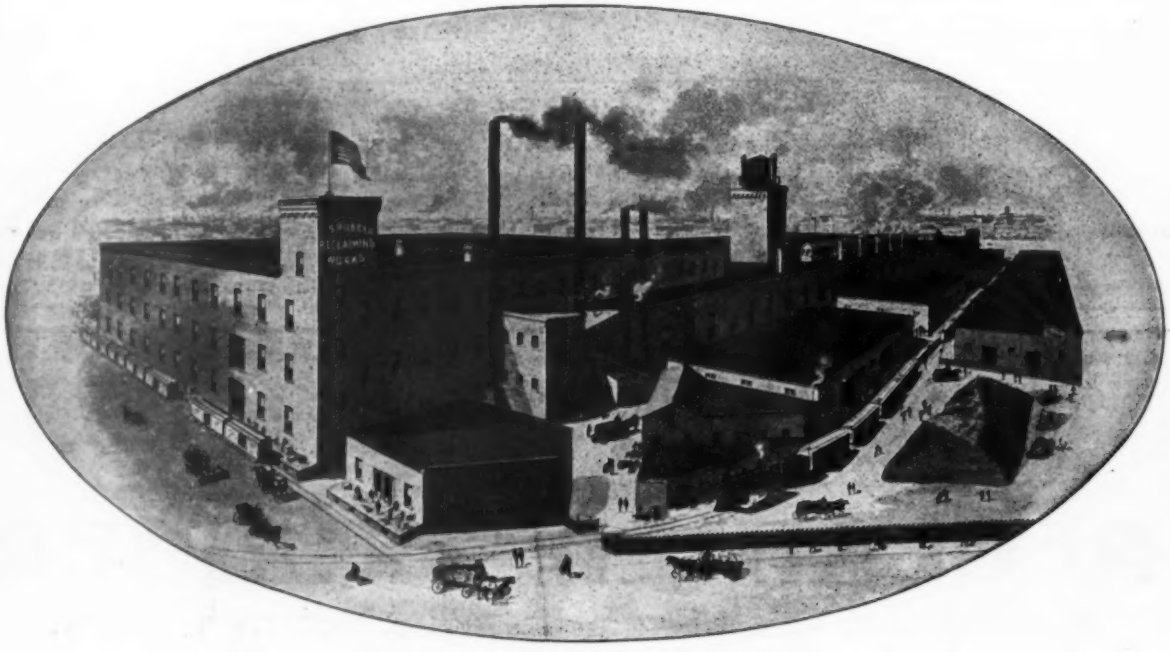

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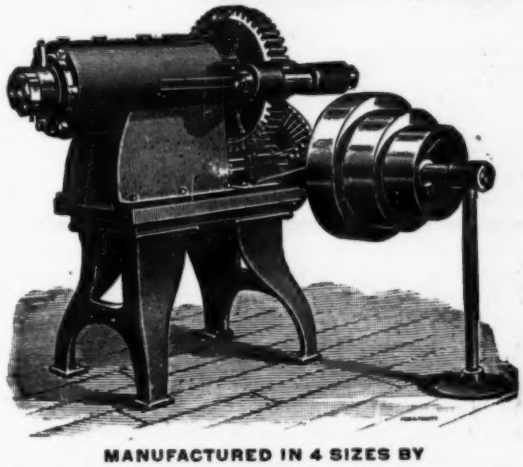

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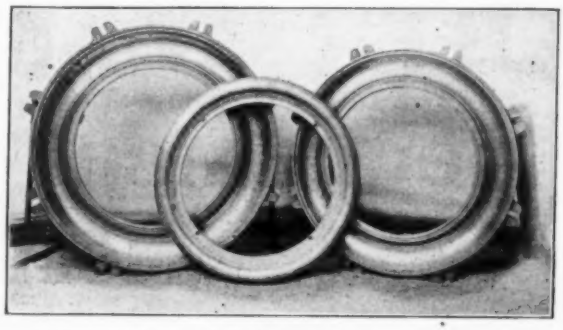

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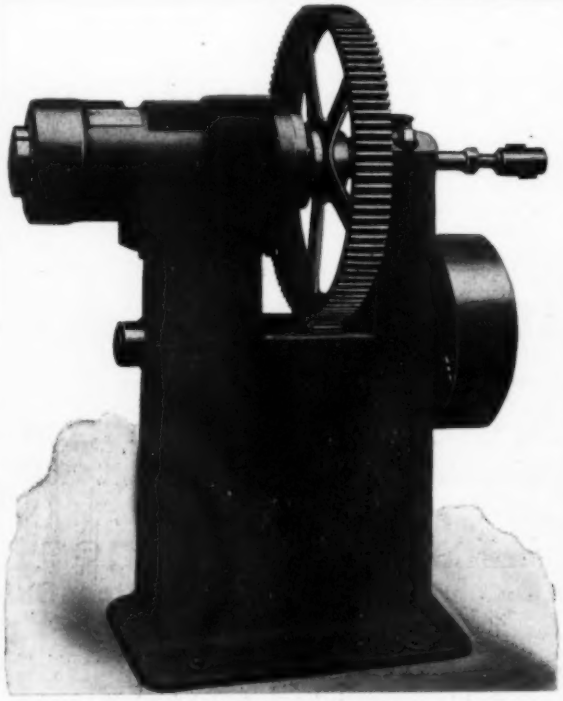

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PATENTS GRANTED FOR EXTRACTING GUAYULE RUBBER.

No. 316. Ramon Marion Carballo Romay. Process for extracting rubber and the like by centrifugal force. July 20, 1892.

No. 548. Hutchinson Robert. Improvements in making compounds for rubber or gutta-percha. March 20, 1894.

No. 1121. Benjamin A. Matello. Improvements in waterproof fabrics. Nov. 16, 1897.

No. 1167. Rowland Harry Biffen and Esme Howard. Process for extracting rubber by centrifugal force. Feb. 3, 1898.

No. 1435. Chester Yres. Making substitute for rubber and gutta-percha from gelatine, glycerine, and bichromate of potash. Feb. 28, 1899.

No. 1494. Guillermo Prampolini and Nicolas Lovece. Process for extracting rubber from a wild shrub. May 23, 1899.

No. 1634. Juan N. Mayo. Chemico mechanical process for extracting rubber from the tree called "Hule Potosi." Oct. 31, 1899.

No. 2147. Pablo Bergner. Process for extracting rubber from different plants. Aug. 1, 1901.

No. 2164. Constancio de la Garza and Ruben Zertuche. Process for extracting rubber from guayule by means of water. Aug. 20, 1901.

No. 2386. Andres Almaraz. Process for chemical extraction of rubber from various herbaceous plants. Jan. 28, 1902.

No. 2458. Harvey S. Leach. Process for extracting *Ficus* rubber, and the patent granted in the name of Juan Fritz. April 1, 1902.

No. 2756. Albert Charles Joseph Grosjean. New method of coagulating latex containing rubber. Nov. 6, 1902.

No. 2951. Jose P. Lomelin. Cheap process for extracting all kinds of resins from herbs. April 21, 1903.

No. 3067. Fernand Vivier. Mechanical process for decorticating and extracting the resin or gum from the *Parthenium*, without using chemicals.

No. 3202. Juan Fritz. Entirely new process for extracting rubber from *Sinantereas, Siphonias,* and *Hevcas* of Mexico. Oct. 6, 1903.

No. 3325. Myron George Brownell. Process for extracting rubber or the like from the roots of certain plants. Nov. 12, 1903.

No. 3367. William Appleton Lawrence. Improvements in extracting rubber. Dec. 5, 1903.

No. 3368. W. A. Lawrence. Improvements in extracting rubber. Dec. 12, 1903.

No. 3380. Louis Lazare Auguste Seguin and Jules Francois G. R. de Sales. Process for manufacturing rubber. Dec. 10, 1903.

No. 3435. Guillermo Prampolini. Chemical mechanical process for vulcanizing the new bush rubber. Oct. 1, 1903.

No. 3468. Louis Lazare Auguste Seguin. Producing a substance similar to rubber. Oct. 1, 1903.

No. 3635. M. G. Brownell. Certain new and useful substances like rubber. April 9, 1904.

No. 3641. Richard A. Leigh. Improvements in a material resembling rubber. April 12, 1904.

No. 3716. F. Vivier. Improved method of extracting rubber or resin from *Parthenium argentatum*. May 12, 1904.

No. 3750. Elias Delafond. Treatment of rubber yielding bushes or twigs, dry or green. May 26, 1904.

No. 3764. E. Delafond. Same. June 4, 1904.

No. 3800. E. Delafond. Additions to No. 3764. June 28, 1904.

No. 3865. Ennemond Bacconier. Apparatus for extracting rubber from the guayule and gobernadora (?) plants. July 21, 1904.

No. 3943. E. Delafond. Additions to the process of extracting rubber described in No. 3764. Aug. 18, 1904.

No. 3945. Julio Brus. Apparatus for extracting, reclaiming and refining rubber from all vegetables which yield it. Aug. 20, 1904.

No. 3979. Luis G. Gutierrez. New and useful process for rubbering cloth. Sept. 6, 1904.

No. 4079. Ferdinand Ephraim. Process and apparatus for gathering gum from rubber plants. Oct. 22, 1904.

No. 4127. Samuel Perry Pollak. Process for extracting rubber from guayule or other plants belonging to this family. Nov. 17, 1904.

No. 4128. S. P. Pollak. Extracting rubber from maguey and other plants of this family. Nov. 17, 1904.

No. 4129. S. P. Pollak. Same as No. 4128.

No. 4145. Enrique Moreno. Mechanical chemical process for extracting rubber from plants. No. 22, 1904.

No. 4217. E. Delafond. Machine for extracting rubber from plants and bushes. Dec. 17, 1904.

No. 4163. E. Delafond. Process for facilitating the extraction of rubber. Nov. 26, 1904.

No. 4235. Orlando Buell Hardy. Process for extracting rubber and similar products from vegetables. Dec. 27, 1904.

No. 4238. F. Ephraim. Portable apparatus for macerating plants and herbs, especially guayule. Dec. 29, 1904.

No. 4256. Alejandro Gonsen. Apparatus to concentrate rubber or gum from the guayule plant. Jan. 7, 1905.

No. 4327. Santos M. Gonzales and Pascual Garcia Peña. Process for extracting rubber from guayule and similar plants. Feb. 4, 1905.

No. 4259. R. A. Leigh. Machine for making a crude gum, similar to rubber. Jan. 7, 1905.

No. 4360. Julio Brus. Multiple effect apparatus for extracting oils and rubber from various plants. Feb. 14, 1905.

No. 4374. S. P. Pollak. Method of extracting rubber from various plants. Feb. 21, 1905.

No. 4429. E. Delafond. Process for extracting rubber dry, mechanically, without the use of chemicals. Mar. 18, 1905.

No. 4445. Jose G. Palacios. Process for extracting rubber. March 25, 1905.

No. 4463. Francisco F. del Hoyo. Machine for extracting rubber from guayule. March 30, 1905.

No. 4473. W. A. Lawrence. Process for washing crude rubber. April 4, 1905.

No. 4476. Adolfo Marx. Process for extracting rubber from guayule. April 4, 1905.

No. 4504. Alejandro Gonsen. Improvements in concentrating rubber and other gums from plants. April 13, 1905.

No. 4525. E. Delafond. Process for pulping plants and agglomerating the rubber. April 25, 1905.

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No. 4564. E. Delafond. Extracting rubber. May 11, 1905.

No. 4565. E. Delafond. Utilization of *Agava*. May 11, 1905.

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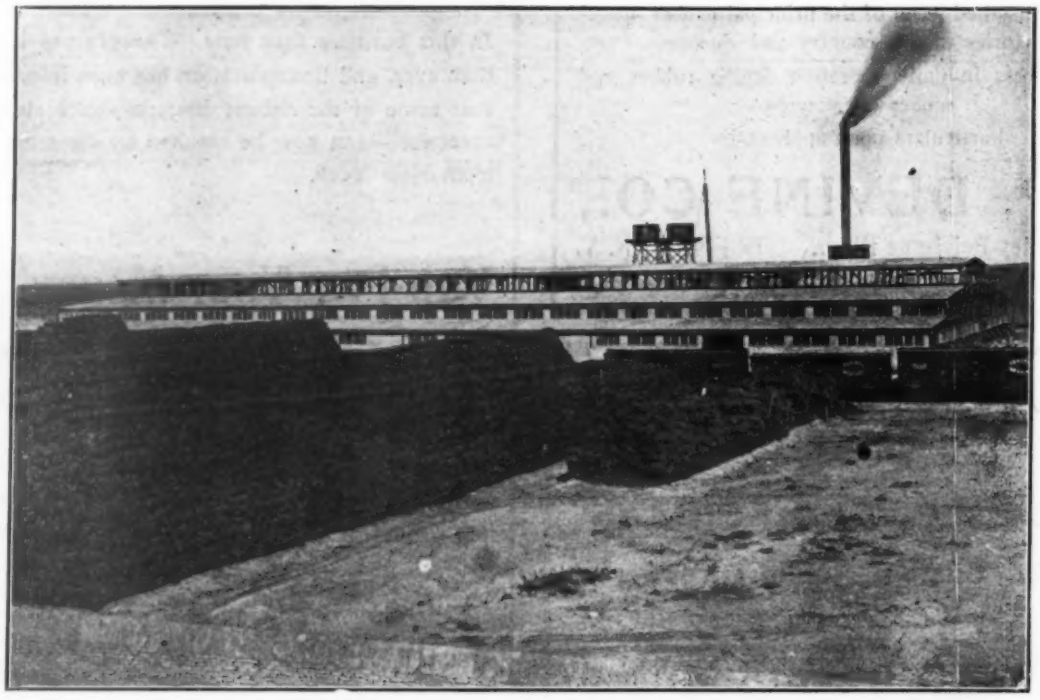

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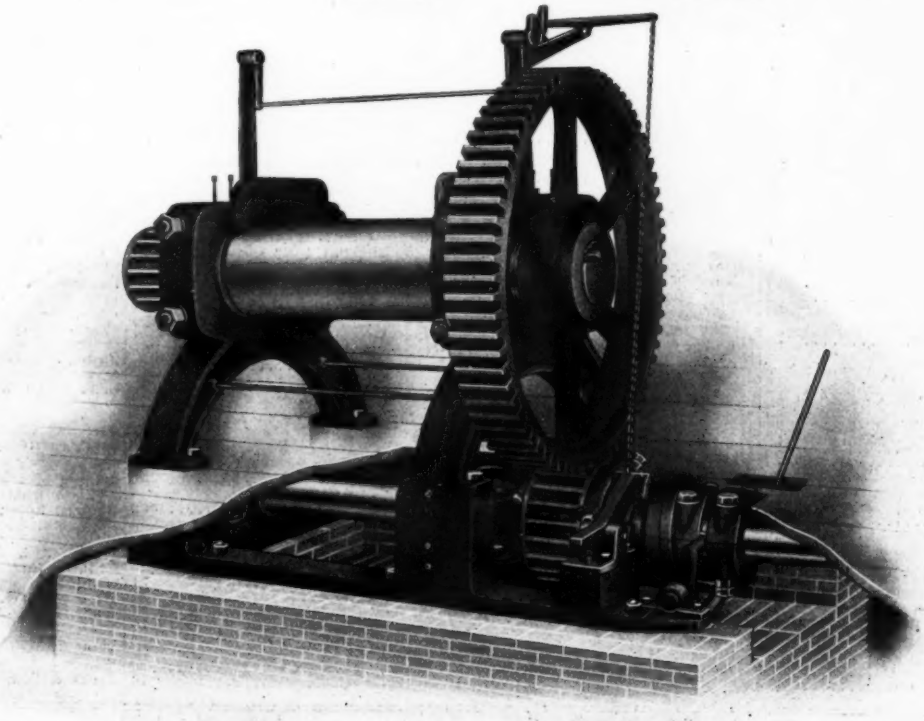

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Hodgman Rubber Co., New York.

Dredging Sleeves.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.

Force Cups.

The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Hodgman Rubber Co., New York.
Mattson Rubber Co., Lodi, N. J.
National India Rubber Co., Bristol, R. I.

Fruit Jar Rings.

Acme Rubber Mfg. Co., Trenton.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cincinnati Rubber Mfg. Co., Cincinnati, Ohio.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
Empire Rubber Mfg. Co., Trenton, N. J.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
New York Belting & Packing Co., N. Y.

Fuller Balls.

Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Jenkins Bros., New York.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.

Gage Glass Washers.

Boston Belting Co., Boston, Mass.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Jenkins Bros., New York.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
Mechanical Rubber Co., Chicago, Ill.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Revere Rubber Co., Boston, Mass.
Jos. Stokes Rubber Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City, N. J.

Gas-Bags (Rubber).

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
National India Rubber Co., Bristol, R. I.
Peerless Rubber Mfg. Co., New York.
Tyer Rubber Co., Andover, Mass.
Voorhees Rubber Mfg. Co., Jersey City.

Gasket Tubing.

Boston Belting Co., Boston-New York.
Canadian Rubber Co. of Montreal.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Jenkins Bros., New York.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.
New Jersey Car Spring & Rubber Co.
Rever Rubber Co., Boston—New York.

Grain Drill Tubes.

Cincinnati Rubber Mfg. Co., Cincinnati, Ohio.
Dayton Rubber Mfg. Co., Dayton, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.

Hat Bags.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
Mechanical Rubber Co., Chicago.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Rever Rubber Co., Boston—New York.

Horse Shoe Pads.

Canadian Rubber Co. of Montreal.
Continental Rubber Works, Erie, Pa.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Hose—Wire Wound.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Hose Core.

Alderfer Crate Co., Sharon Center, O.

Hose Pipes, Nozzles, Couplings and Fittings.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Eureka Fire Hose Mfg. Co., New York.
Revere Rubber Co., Boston.
A. Schrader's Son, Inc., New York.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.

Hose Linings.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston—New York.

Hose Racks and Reels.

Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
New York Belting & Packing Co., N. Y.
Wirt & Knox Mfg. Co., Philadelphia.

Hose—Rubber Lined.

Cotton and Linen.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Gutta Percha & Rubber Mfg. Co., N. Y.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Fire Hose Mfg. Co., New York.
Fabric Fire Hose Co., New York.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Gutta Percha & Rubber Mfg. Co. of Toronto.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
Jos. Stokes Rubber Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City.

Hose—Submarine.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston-New York.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
A. Schrader's Son, Inc., New York.

Hose Bands, Straps & Menders.

Boston Woven Hose & Rubber Co.
William Yerdon, Fort Plain, N. Y.

Lawn-Hose Supporters.

C. J. Bailey & Co., Boston.

Lawn Sprinklers.

W. D. Allen Mfg. Co., Chicago.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.

Mallets (Rubber).

Boston Belting Co., Boston-New York.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston-New York.

Mould Work.

(See Mechanical Rubber Goods.)

H. O. Canfield Co., Bridgeport, Ct.
Canton Rubber Co., Canton, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
Hodgman Rubber Co., New York.
Massachusetts Chemical Co., Walpole, Mass.
Mattson Rubber Co., Lodi, N. J.
Morgan & Wright, Detroit, Mich.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

Oil Well Supplies.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Lake Shore Rubber Co., Erie, Pa.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-Pittsburgh.
Voorhees Rubber Mfg. Co., Jersey City.

Packing.

(See Mechanical Rubber Goods.)

B. & G. Rubber Co., Erie, Pa.
Jenkins Bros., New York.
Mattson Rubber Co., Lodi, N. J.
Rubbertex Cloth & Paper Co., Logansport, Ind.

Paper Machine Rollers.

Boston Belting Co., Boston-New York.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Manhattan Rubber Mfg. Co., New York.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Plumbers' Supplies.

Canadian Rubber Co. of Montreal.
H. O. Canfield Co., Bridgeport, Ct.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
Republic Rubber Co., Youngstown, O.
Western Rubber Works, Goshen, Ind.

Pump Valves.

(See Mechanical Rubber Goods.)

Jenkins Bros., New York.
Mattson Rubber Co., Lodi, N. J.
Massachusetts Chemical Co., Walpole, Mass.

Rolls—Rubber Covered.

Acme Rubber Mfg. Co., Trenton, N. J.
Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
Mechanical Rubber Co., Chicago.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.

Sewing Machine Rubbers.

Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.

Springs—Rubber.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston-New York.
Canadian Rubber Co. of Montreal.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
Massachusetts Chemical Co., Walpole, Mass.
Mattson Rubber Co., Lodi, N. J.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Stair Treads.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co., of Montreal.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co. of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Massachusetts Chemical Co., Walpole, Mass.

RUBBER BUYERS' DIRECTORY—Continued.

Stair Treads—Continued.

National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Thread.

B. F. Goodrich Co., Akron, O.
Mechanical Fabric Co., Providence, R. I
Revere Rubber Co., Boston—New York.

Tiling.

Canadian Rubber Co., of Montreal, Ltd.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y
The Gutta Percha & Rubber Mfg. Co. of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring and Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Voorhees Rubber Mfg. Co., Jersey City.

Tubing.

(See Mechanical Rubber Goods.)
American Hard Rubber Co., New York.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
Mattson Rubber Co., Lodi, N. J.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

Valve Balls.

Boston Belting Co., Boston.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
Jenkins Bros., New York.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
Mechanical Rubber Co., Chicago.
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.

Valve Discs.

American Hard Rubber Co., New York.
Boston Belting Co., Boston-New York.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Western Rubber Works, Goshen, Ind.

Valves.

(See Mechanical Rubber Goods.)
Jenkins Bros., New York-Chicago.
Mattson Rubber Co., Lodi, N. J.

Vulcanite Emery Wheels.

Manhattan Rubber Mfg. Co., Passaic, N. J.
New York Belting & Packing Co., Ltd., New York.

Wringer Rolls.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
New York Belting & Packing Co., N. Y.
Republic Rubber Co., Youngstown, O.

DRUGGISTS' AND STATIONERS' SUNDRIES.

Atomizers.

Bandages.

Bulbs.

Nipples.

Syringes.

Water Bottles.

Druggists' Sundries, Generally.

American Hard Rubber Co., New York.
C. J. Bailey & Co., Boston.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Canton Rubber Co., Canton, O.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Huron Rubber Co., Cleveland, O.
L. & M. Rubber Works, Canton, Ohio.
Luzerne Rubber Co., Trenton, N. J.
National India Rubber Co., Bristol, R. I.
Parker, Stearns & Co., N. Y.
Pirelli & Co., Milan, Italy.
Seamless Rubber Co., New Haven, Ct.
Star Rubber Co., Akron, O.
Tyer Rubber Co., Andover, Mass.
Western Specialty Mfg. Co., N. Y.

Balls, Dolls and Toys.

New York Rubber Co., New York.

Combs.

American Hard Rubber Co., New York.

Elastic Bands.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York-Boston.
Tyer Rubber Co., Andover, Mass.

Erasive Rubbers.

Davidson Rubber Co., Boston.
B. F. Goodrich Co., Akron, O.

Finger Cots.

Canton Rubber Co., Canton, O.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Faultless Rubber Mfg. Co., Akron, O.
Huron Rubber Co., Cleveland, O.
B. F. Goodrich Co., Akron, O.
L. & M. Rubber Works, Carrollton, O.
The Rubber Products Co., Barberton, O.

Gloves.

Canadian Rubber Co. of Montreal.
Canton Rubber Co., Canton, O.
Davol Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
L. & M. Rubber Works, Carrollton, O.
National India Rubber Co., Bristol, R. I.
Rubber Products Co., Barberton, O.

Hard Rubber Goods.

American Hard Rubber Co., New York.
Canadian Rubber Co. of Montreal.
Davidson Rubber Co., Boston.
H. O. Canfield Co., Bridgeport, Ct.
Davol Rubber Co., Providence, R. I.
Luzerne Rubber Co., Trenton, N. J.
Stokes Rubber Co., Joseph, Trenton, N. J.
Tyer Rubber Co., Andover, Mass.

Hospital Sheetings.

Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

Ice Bags and Ice Caps.

Canton Rubber Co., Canton, O.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
L. & M. Rubber Works, Carrollton, O.
National India Rubber Co., Bristol, R. I.
The Rubber Products Co., Barberton, O.
Tyer Rubber Co., Andover, Mass.

Life Preservers.

Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Shower Bath Sprinklers.

L. & M. Rubber Works, Carrollton, O.
A. Schrader's Son, Inc., New York.

Sponges (Rubber).

Faultless Rubber Co., Ashland, O.
N. Tire Rubber Sponge Co., Chicago.

Stationers' Sundries.

American Hard Rubber Co., New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cincinnati Rubber Mfg. Co., Cincinnati, Ohio.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York-Boston.
Seamless Rubber Co., New Haven, Ct.
Tyer Rubber Co., Andover, Mass.

Stopples (Rubber).

Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
Erie Rubber Works, Erie, Pa.
Hodgman Rubber Co., New York.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y.
A. Schrader's Sons, Inc., New York.
Tyer Rubber Co., Andover, Mass.

Throat Bags.

Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich, Akron, O.
L. & M. Rubber Works, Carrollton, O.
National India Rubber Co., Bristol, R. I.
Tyer Rubber Co., Andover, Mass.

Tobacco Pouches.

Canadian Rubber Co. of Montreal.
Davidson Rubber Co., Boston.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
The Rubber Products Co., Barberton, O.
Tyer Rubber Co., Andover, Mass.

MACKINTOSHED AND SURFACE GOODS.

Air Goods (Rubber).

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
New York Rubber Co., New York.
National India Rubber Co., Providence.
Tyer Rubber Co., Andover, Mass.

Air Mattresses.

Canadian Rubber Co. of Montreal.
Mechanical Fabric Co., Providence, R. I.
National India Rubber Co., Bristol, R. I.

Barbers' Bibs.

Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
Tyer Rubber Co., Andover, Mass.

Bathing Caps.

Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.

Bellows Cloths.

Boston Rubber Co., Boston.
Cleveland Rubber Co., Cleveland, O.
Hodgman Rubber Co., New York.

Calendering.

Plymouth Rubber Co., Stoughton, Mass.

Carriage Ducks and Drills.

Acme Rubber Mfg. Co., Trenton, N. J.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Gutta Percha & Rubber Mfg. Co., Toronto.
National India Rubber Co., Bristol, R. I.

Clothing.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Gutta Percha & Rubber Mfg. Co. of Toronto.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.
Pirelli & Co., Milan, Italy.

Cravenette.

Cravenette Co., Ltd.

Diving Apparatus.

A. Schrader's Son, Inc., New York.
Hodgman Rubber Co., New York.

Horse Covers.

Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Leggings.

Cleveland Rubber Co., Cleveland, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Mackintoshes.

(See Clothing.)

Proofing.

Canadian Rubber Co. of Montreal.
Plymouth Rubber Co., Stoughton, Mass.

Rain Coats.

Cravenette Co., Ltd.

Rubber Coated Cloths.

Mechanical Fabric Co., Providence, R. I.

Waterproof Cloth.

Rubbertex Cloth & Paper Co., Logansport, Ind.

RUBBER FOOTWEAR.

Boots and Shoes.

American Rubber Co., Boston.
Boston Rubber Shoe Co., Boston.
Canadian Rubber Co. of Montreal.
L. Candee & Co., New Haven, Ct.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co. of Toronto.
Hood Rubber Co., Boston.
Lycoming Rubber Co., Williamsport, Pa.
Meyer Rubber Co., New York.
National India Rubber Co., Boston.
United States Rubber Co., New York.
Wales-Goodyear Rubber Co., Boston.
Woonsocket Rubber Co., Providence.

Heels and Soles.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Continental Caoutchouc & Guttapercha Co., Hanover.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Massachusetts Chemical Co., Walpole, Mass.
Plymouth Rubber Co., Stoughton, Mass.
Springfield Tire & Rubber Co., Springfield, Ohio.
Western Rubber Works, Goshen, Ind.

Tennis Shoes.

American Rubber Co., Boston.
Boston Rubber Shoe Co., Boston.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
National India Rubber Co., Providence.
United States Rubber Co., New York.

Wading Pants.

Canadian Rubber Co. of Montreal.
Hodgman Rubber Co., New York.

DENTAL AND STAMP RUBBER.

Dental Gum.

American Hard Rubber Co., New York.
Cleveland Rubber Co., Cleveland, O.
Tyer Rubber Co., Andover, Mass.

Rubber Dam.

Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Tyer Rubber Co., Andover, Mass.

Stamp Gum.

B. F. Goodrich Co., Akron, O.
Mattson Rubber Co., Lodi, N. J.
Mechanical Rubber Co., Chicago, Ill.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.

ELECTRICAL.

Electrical Supplies.

American Hard Rubber Co., New York.
Lake Shore Rubber Co., Erie, Pa.
Joseph Stokes Rubber Co., Trenton, N. J.
Massachusetts Chemical Co., Boston.
Mattson Rubber Co., Lodi, N. J.
Tyer Rubber Co., Andover, Mass.

Friction Tape.

Acme Rubber Mfg. Co., Trenton, N. J.
Boston Belting Co., Boston.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Massachusetts Chemical Co., Boston.
Mechanical Rubber Co., Chicago.
National India Rubber Co., Bristol, R. I.
Revere Rubber Co., Boston-New York.

RUBBER BUYERS' DIRECTORY—Continued.

Hard Rubber Goods.
American Hard Rubber Co., New York.
Canadian Rubber Co. of Montreal.
Luzerne Rubber Co., Trenton, N. J.
Joseph Stokes Rubber Co., Trenton, N. J.

Insulating Compounds.
Canadian Rubber Co. of Montreal.
Gutta-Percha & Rubber Mfg. Co., Toronto.
Massachusetts Chemical Co., Boston.

Insulated Wire and Cables.
Acme Rubber Mfg. Co., Trenton, N. J.
W. R. Brixey, New York.
The Indiana Rubber and Insulated Wire Co., Jonesboro, Indiana.
National India Rubber Co., Providence.

Splicing Compounds.
Home Rubber Co., Trenton, N. J.
Massachusetts Chemical Co., Walpole, Mass.

SPORTING GOODS.

Foot Balls.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Golf Balls.
Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Davidson Rubber Co., Boston.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.

Sporting Goods.
Canadian Rubber Co. of Montreal.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Tyer Rubber Co., Andover, Mass.

Striking Bags.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Rubber Products Co., Barberton, O.

Submarine Outfits.
Hodgman Rubber Co., New York.
A. Schrader's Sons, Inc., New York.

MISCELLANEOUS.

Boxes (Wood).
Henry H. Sheip & Co., Philadelphia.

Boxes (Paper).
A. Petersen Co., Akron, O.

Brass Fittings.
A. Schrader's Son, Inc., New York.

Cement (Rubber).
Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Manhattan Rubber Mfg. Co., New York.
Massachusetts Chemical Co., Walpole, Mass.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.

Chemists.
Maywald, F. J., New York.
Stephen P. Sharples, Boston, Mass.

Consulting Engineers.
Akron Rubber Engineering Co., Akron, O.
M. P. Fillingham, New York.

Contracting Engineer.
August Johnston, New York.

Planting.
Peru-Para Plan. Co., Chicago.
Tuma River Plan. Co., New York.

Rubber Journals.
Gummi-Zeitung, Dresden, Germany.
L'Agriculture des Pays Chauds, France.

Rubber Tree Seeds.
J. P. William & Bros., Heneratgoda, Ceylon.

Tapping Tools.
G. Van den Kerckhove, Brussels, Belgium.

Valves for Air Goods.
A. Schrader's Son, Inc., New York.

MACHINERY AND SUPPLIES FOR RUBBER MILLS.

RUBBER MACHINERY.

Acid Tanks.
Birmingham Iron Foundry, Derby, Conn.

Band Cutting Machines.
A. Adamson, Akron, O.
Birmingham Iron Foundry, Derby, Conn.

Belt Folding Machines.
Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.

Belt Slitters.

Cloth Dryers.

Gearing.

Shafting.

Wrapping Machines.
Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.

Belt Stretchers.
Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.
Hoggson & Pettis Mfg. Co., New Haven

Boilers.
William R. Thropp, Trenton, N. J.
John E. Thropp & Sons Co., Trenton, N. J.

Braiders.
New England Butt Co., Providence, R. I.

Calenders.
Birmingham Iron Foundry, Derby, Conn.
David Bridge & Co., Castleton, Manchester, Eng.
Farrel Foundry & Mach. Co., Ansonia, Conn.
Textile-Finishing Machinery Co., Providence, R. I.

Castings.
A. Adamson, Akron, O.
Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.

Chucks (Lathe).
Hoggson & Pettis Mfg. Co., New Haven.

Churns.
American Tool & Machine Co., Boston.

Clutches.
Farrel Foundry & Mach. Co., Ansonia, Conn.

Crackers.
Birmingham Iron Foundry, Derby, Conn.

Devulcanizers.
Biggs Boiler Works Co., Akron, O.
Birmingham Iron Foundry, Derby, Conn.
Edred W. Clark, Hartford, Conn.
William R. Thropp, Trenton, N. J.

Dies.
John J. Adams, Worcester, Mass.
Boston Die Co., Boston.
Hoggson & Pettis Mfg. Co., New Haven

Doubling Machines.
American Tool & Machine Co., Boston.

Drying Machines.
David Bridge & Co., Castleton, Manchester, Eng.
Joseph P. Devine, Buffalo, N. Y.
Birmingham Iron Foundry, Derby, Conn.
Textile-Finishing Machinery Co., Providence, R. I.

Embossing Calenders.
Textile-Finishing Machinery Co., Providence, R. I.

Engines, Steam.
William R. Thropp, Trenton, N. J.
John E. Thropp & Sons Co., Trenton, N. J.

Engraving Rolls.
Hoggson & Pettis Mfg. Co., New Haven.

Grinders and Mixers.
Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.
William R. Thropp, Trenton, N. J.

Hangers.
Farrel Foundry & Mach. Co., Ansonia, Conn.

Hose Machines.
A. Adamson, Akron, O.
Birmingham Iron Foundry, Derby, Conn.
New England Butt Co., Providence, R. I.

Hydraulic Accumulators.
Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.

Insulating Machinery.
John Royle & Sons, Paterson, N. J.

Lasts (Rubber Shoe).
Middlesex Last Co., Boston.

Lathes—Hard Rubber.
A. Adamson, Akron, O.

Lathes—Jar Ring.
A. Adamson, Akron, O.
Birmingham Iron Foundry, Derby, Conn.
William R. Thropp, Trenton, N. J.

Machinists' Tools.
Hoggson & Pettis Mfg. Co., New Haven.

Moulds.
A. Adamson, Akron, O.
Birmingham Iron Foundry, Derby, Conn.
Hoggson & Pettis Mfg. Co., New Haven.
Williams Foundry & Machine Co., Akron, Ohio.

Pillow Blocks.
Farrel Foundry & Mach. Co., Ansonia, Conn.

Presses (for Rubber Work).
A. Adamson, Akron, O.
Birmingham Iron Foundry, Derby, Conn.
Boomer & Boschert Press Co., Syracuse, N. Y.
Edred W. Clark, Hartford, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.
William R. Perrin & Co., Chicago Ill.
William R. Thropp, Trenton, N. J.
Williams Foundry & Machine Co., Akron, Ohio.

Pumps.
Birmingham Iron Foundry, Derby, Conn.
Boomer & Boschert Press Co., Syracuse.
Farrel Foundry & Mach. Co., Ansonia, Conn.

Racks for Boot and Shoe Cars.
Hoggson & Pettis Mfg. Co., New Haven.

Reducing Valves.
Mason Regulator Co., Boston.

Rollers (Hand).
Hoggson & Pettis Mfg. Co., New Haven.

Rubber Covering Machines.
New England Butt Co., Providence, R. I.

Spreaders.
American Tool & Machine Co., Boston.
Birmingham Iron Foundry, Derby, Conn.
New England Butt Co., Providence, R. I.

Steam Traps and Specialties.
Jenkins Bros., New York.
Mason Regulator Co., Boston.
Osgood Sayen, Philadelphia, Pa.

Steel Stamps.
Hoggson & Pettis Mfg. Co., New Haven.

Stitchers (Hand).
Hoggson & Pettis Mfg. Co., New Haven

Strip Covering Machines.

Strip Cutters.
New England Butt Co., Providence, R. I.

Tire Molds.
Williams Foundry & Machine Co., Akron, O.

Tubing Machines.
A. Adamson, Akron, O.
Edred W. Clark, Hartford, Conn.
John Royle & Sons, Paterson, N. J.
Williams Foundry & Machine Co., Akron, Ohio.

Vacuum Drying Chambers.
Buffalo Foundry & Machine Co., Buffalo, N. Y.
Joseph P. Devine Co., Buffalo, N. Y.

Varnishing Machines.
Birmingham Iron Foundry, Derby, Conn.

Vulcanizers.
Biggs Boiler Works Co., Akron, O.
Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, M. P. Fillingham, New York.
John E. Thropp's Sons Co., Trenton, N. J.
William R. Thropp, Trenton, N. J.

Washers.
Birmingham Iron Foundry, Derby, Conn.
David Bridge & Co., Castleton, Manchester, Eng.
Continental Rubber Works, Erie, Pa.
Farrel Foundry & Mach. Co., Ansonia, Conn.
William R. Thropp, Trenton, N. J.

Wire Insulating Machines.
New England Butt Co., Providence, R. I.
John Royle & Sons, Paterson, N. J.

SECOND-HAND MACHINERY.

Philip McGrory, Trenton, N. J.
M. Norton & Co., Charlestown, Mass.

FACTORY SUPPLIES.

Aluminum Flake.
Aluminum Flake Co., Akron, O.

Antimony, Sulphurets of.
Golden.
Actien-Ges. Georg Egestorff's Salzwerke Linden, Germany.
Atlas Chemical Co., Newtonville, Mass
Avery Chemical Co., Boston.
Golden and Crimson.
Joseph Cantor, New York.
Golden and Crimson.
Wm. H. Scheel, New York.

MACHINERY AND SUPPLIES FOR RUBBER MILLS—Continued.

Antimony, Sulphurets of.—Continued.

Artificial Rubber.
National Co., Chicago.
Stamford (Conn.) Rubber Supply Co.
Typke & King, London, England.

Balata.
George A. Alden & Co., Boston.

Barytes.
Avery Chemical Co., Boston.

Benzol.
Avery Chemical Co., Boston.
Barrett Mfg. Co., Philadelphia.
Samuel Cabot, Boston.

Black Hypo.
Joseph Cantor, New York.
William H. Scheel, New York.
Typke & King, London, England.

Carbon Bisulphide.
George W. Spealght, New York.

Chemicals.
Massachusetts Talc Co., Boston.
Oxford Tripoli Co., New York.
George W. Spealght, New York.
S. P. Wetherill Co., Philadelphia, Pa.

Colors.
Joseph Cantor, New York.
William H. Scheel, New York.
Typke & King, London, England.
S. P. Wetherill Co., Philadelphia, Pa.

Crude Rubber.
George A. Alden & Co., Boston.
Wallace L. Gough Co., New York.
Hagermeyer & Brunn, New York.
Adolph Hirsch & Co., New York.
Rubber Trading Co., New York-Boston.

Dermatine.
The Dermatine Co., London.

Ducks and Drills (Cotton).
J. H. Lane & Co., New York.

Gilsonite.
William H. Scheel, New York.

Graphite Grease.
Jos. Dixon Crucible Co., Jersey City.

Guayule Rubber.
Continental Rubber Co.
Ed. Maurer, New York.

Gutta-Percha.
George A. Alden & Co., Boston.
Rubber Trading Co., New York-Boston.

Hydro-Carbon Products.
Geo. A. Alden & Co., Boston.
William H. Scheel, New York.
Raven Mining Co., Chicago.

Infusorial Earth.
Stamford (Conn.) Rubber Supply Co.

Iron Oxide.
Avery Chemical Co., Boston.

Kapak.
Raven Mining Co., Chicago.

Lampblack.
Samuel Cabot, Boston.

Lead—Blue.

Lead—Sublimed White.
Picher Lead Co., Chicago, Ill.

Lithopone.
Avery Chemical Co., Boston.
Gabriel & Schall, New York.

Mineral Rubber.
Geo. A. Alden & Co., Boston.

Paris White and Whiting.
H. P. Taintor Mfg. Co., New York.

Reclaimed Rubber.
Aladdin Rubber Co., Akron, O.
Alkali Rubber Co., Akron, O.
F. H. Appleton & Son, Boston.
Bloomingdale (N. J.) Soft Rubber Co.
E. H. Clapp Rubber Co., Boston, Mass.
Danversport Rubber Co., Boston.
Derby Rubber Co., Derby, Conn.
Eastern Rubber Co., New York.
Manufacturers' Co., Phila., Pa.
New Jersey Rubber Co., Lambertville, N. J.
Pequanoc Rubber Co., Butler, N. J.
Philadelphia Rubber Works, Philadelphia.
Rickaby Rubber Mfg. Co., South Framingham, Mass.
Rothschild, H., New York.
Stockton Rubber Co., Stockton, N. J.
Jos. Stokes Rubber Co., Trenton, N. J.
S. & L. Rubber Co., Chester, Pa.
U. S. Rubber Reclaiming Works, N. Y.
Westmoreland Rubber Mfg. Co., Grapeville, Pa.

Agents and Dealers.
Philip McGrory, Trenton, N. J.
H. P. Moorhouse, Paris, France.
Rubber Trading Co., New York-Boston.
Wm. Somerville's Sons, Liverpool.

Rubber Flux.
Massachusetts Chemical Co., Walpole, Mass.

Rubber Makers' White.
Grasselli Chemical Co., N. Y.

Scrap Rubber.
Bers & Co., Philadelphia.
M. Berzen & Co., New York.
P. Broomfield & Co., Boston.
Wm. H. Cummings & Sons, New York.
Theodore Hofeller & Co., Buffalo, N. Y.
M. Kaufman, Chicago.
A. W. Leslie & Co., Ltd., London, Eng.
B. Loewenthal & Co., New York and Chicago.
J. Loewenthal & Sons, Chicago.
Philip McGrory, Trenton, N. J.
Meyer Bros., Philadelphia, Pa.
Albert A. Moers, New York.
M. Norton & Co., Charlestown, Mass.
E. Parser & Brodsky, Antwerp.
J. Schnurmann, London.
Schwab & Co., Philadelphia.
Trenton Scrap Rubber Supply Co., Trenton, N. J.
United States Waste Rubber Co., Brockton, Mass.
M. J. Wolpert, Odessa, Russia.
B. A. Zacks & Sons, Erie, Pa.

Substitute.
Joseph Cantor, New York.
Carter, Bell Mfg. Co., New York.
Corn Products Refining Co., New York.
C. P. Dos Santos, New York.
Massachusetts Chemical Co., Boston.
The Rubber Chemical Co., Birmingham, England.
Wm. H. Scheel, New York.
Stamford (Conn.) Rubber Supply Co.
Typke & King, London, England.
Robert E. Tyson, Fairfield, Conn.

Sulphur.
Battelle & Renwick, New York.
T. & S. C. White Co., New York.

Sulphur Chloride.
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Stamford (Conn.) Rubber Supply Co

Whiting.
H. P. Taintor Mfg. Co., New York.

Zinc, Oxide of.
New Jersey Zinc Co., New York.

Zinc Substitute.
Aluminum Flake Co., Akron, O.

Zinc Sulphide.
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Typke & King, London, England.

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Hodgman Rubber Co., New York.
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Fabrics.
Lane & Co., J. H., New York.
National India Rubber Co., Bristol, R. I.

Insulated Wires.
The Indiana Rubber and Insulated Wire Co., Jonesboro, Indiana.
National India Rubber Co., Bristol, R. I.

Mats, Automobile.
Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co., Cambridge, Mass.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
Massachusetts Chemical Co., Walpole, Mass.
National India Rubber Co., Bristol, R. I.
Revere Rubber Co., Boston, Mass.

Repair Stock.
Manhattan Rubber Mfg. Co., Passaic, N. J.
Trenton Rubber Mfg. Co., Trenton, N. J.

Rims, Wheel.
Goodrich Co., B. F., Akron, Ohio.

Tires.
B. & G. Rubber Co., Erie, Pa.
Bailey & Co., C. J., Boston, Mass.
Canadian Rubber Co., of Montreal, Ltd.
Continental Caoutchouc Co., New York.
Continental Rubber Works, Erie, Pa.
Dunlop Tire & Rubber Goods Co., Toronto.
Empire Rubber Mfg. Co., Trenton, N. J.
Goodrich Co., B. F., Akron, Ohio.
Gutta Percha & Rubber Mfg. Co., Toronto.
The Indiana Rubber and Insulated Wire Co., Jonesboro, Indiana.
Kokomo Rubber Co., Kokomo, Ind.
Lake Shore Rubber Co., Erie, Pa.
Morgan & Wright, Detroit, Mich.
Pirelli & Co., Milan, Italy.
Springfield Tire & Rubber Co., Springfield, O.
Plymouth Rubber Co., Stoughton, Mass.
Republic Rubber Co., Youngstown, Ohio.
Trenton Rubber Mfg. Co., Trenton, N. J.

Automobile and Carriage.
Acme Rubber Mfg. Co., Trenton, N. J.
Boston Belting Co., Boston-New York.
Revere Rubber Co., Boston-New York.

Tire Fabrics.
Lane & Co., J. H., New York.

Tire Repairing.
Voorhees Rubber Mfg. Co., Jersey City, N. J.

Treads.
Boston Belting Co., Boston-New York.
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Manhattan Rubber Mfg. Co., New York.
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